John Banister: an Elizabethan surgeon in Brazil

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Abstract

In Brazil's sixteenth-century history, very few references are made to health professionals. On the expedition of Edward Fenton, dispatched by the English Crown in 1582 to set up a trading post in Asia, was the famous barber-surgeon and physician John Banister. The naval squadron, diverted from its original route to repeat the feats of Sir Francis Drake, stopped over in Africa, crossed the Atlantic and anchored off the Santa Catarina coast in Brazil. In these waters, the expedition degenerated into piracy and returned unsuccessful to Europe. John Banister is considered the person who liberated English anatomy from mediaeval slavery, shedding upon it the light of the Renaissance. It was the first time that anyone of this importance in the area of health had visited these latitudes.

Keywords: John Banister (1533-1610); barber-surgeon; physician; sixteenth century; Brazil.

The world's second circumnavigation, an achievement made by Sir Francis Drake between 1577 and 1580 brought England much more than vast treasure in metals, precious stones and pearls looted from the Spanish off the South American Pacific coast. On the Island of Ternate, Moluccas in what is Indonesia today, the intrepid navigator bought six tons of cloves from the Sultan Babu, who controlled the trade of this coveted spice (Thrower, 1984, p.69). After expelling the Portuguese, the sultan was ready to permit the English to set up a trading post on his island. Considering this new prospect of extraordinary financial and political gains, many traders, navigators and councillors of Queen Elizabeth joined forces to continue the excellent relations first established by Drake in Asia. It was then decided to send an expedition to China and the Moluccas. The command of this fleet was entrusted to General Edward Fenton, experienced seafarer who had made two expeditions to the Arctic in search of an alternative route to the Orient via North America (Taylor, 1959, pp.29-31). It is only now, because of the alarming thaw caused by global warming, that the route was announced open – the formerly impassable and deadly Northwest Passage.

Figure 1: Sir Robert Dudley, Earl of Leicester, Baron Denbigh and non-resident rector of Oxford University. A favourite and possible lover of Queen Elizabeth I was the chief investor in the expedition sent to Asia in Drake's wake. Print by Hendrik Goltzius, 1586 (British Museum)

Fenton's squadron included the galleons Leicester and Edward Bonaventure, the ship Elizabeth and the pinnace Francis, owned by former pirate, now knight-privateer Sir Francis Drake. The four ships, with a crew of around 240 sailors, left Southampton on 1st May 1582. Because of their late departure, the English missed the favourable winds that would carry them to Asia around the Cape of Good Hope at the southernmost point of South Africa. With the delay, the veterans of Drake's voyage thought it justifiable to change the route set by the outfitters of the expedition and sailed to Brazil. Their intentions were clear: in fact, their aim was to go through the Magellan Straits and, before proceeding to the Far East, plunder Spanish ships in the Pacific (Taylor, 1959, pp.46-47).

After stopping over in Sierra Leone (where they traded the Elizabeth for rice and ivory), the fleet reached the coast of Santa Catarina on 1st December 1582, exactly seven months after leaving England. The chosen anchorage was baptised Bay of Good Comfort, at that time known as the Don Rodrigo harbour (Hakluyt, 1599, p.659), today's Garopaba Bay.

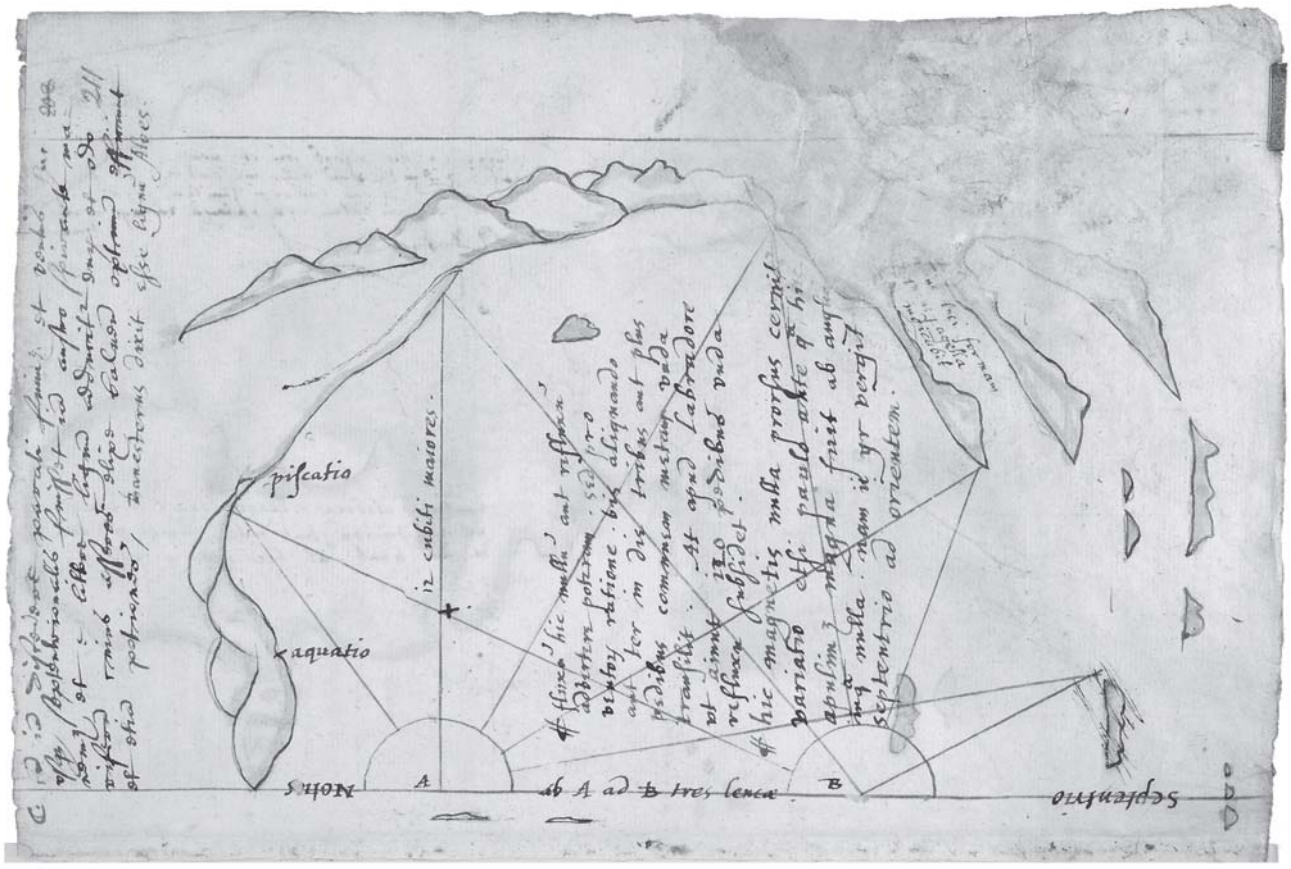

Figure 2: The nautical chart of the anchorage chosen by Edward Fenton's fleet, sketched by chaplain and scrivener Richard Madox. The harbour was called Bay of Good Comfort "because of the different refreshments that we found there ..." *X* marks the spot where the English laid anchor. (British Museum, Cotton, Ms Titus B. VIII, fl.211)

Figure 3: The old harbour Dom Rodrigo, the name given by the Spanish and Portuguese to what is currently Garopaba Bay. The place is undoubtedly the Bay of Good Comfort, translated as Bahia de la Buena Consolación by Friar Juan Pascual de Rivadaneira, captured by Fenton as he went by. Far on the right, the island of Santa Catarina. 2005. Aerial photo by Paulo Rodriguez

John Banister, surgeon adventurer

Travelling on board the galleon Leicester, which weighed around four tons and carried forty cannons, was 49-year old John Banister, barber-surgeon and physician, in the company of General Fenton and other high-ranking officers. Second son of John Banister of Cobham, one of the barons of the Royal Exchequer (Buckland-Wright, 1985, p.809), the surgeon took part in this venture thanks to his personal contact with Sir Robert Dudley, Earl of Leicester, main outfitter of the expedition. Banister as surgeon had been a member of the English troops sent by Elizabeth I to help the Huguenot Protestants against the Catholics during the first French religious war in 1562-1563. Under the command of the Earl of Warwick, the English occupied Le Havre, but failed to resist the pressure of the French Catholics and returned to England defeated (MacCaffrey, 1997, p.1).

From the start of the fourteenth century until 1540, more formal English medicine was practised by different groups that were, as was customary at that time, organised in guilds. The barbers, on one hand, existed as a corporation since at least 1308. They not only trimmed and shaved bears and cut hair but also treated external pathological conditions. They were considered to be the 'workers' of medicine, doing minor surgery, abscess incisions, pulling teeth, bleeding, applying leeches, and so on. Surgeons, on the other hand, had university education, knew how to read and write Latin, and studied classical works such as the anatomy of the Greek physician Claudius Galen (130-200). A surgeon apprentice would stay seven years with a master surgeon. After this period, he was qualified to diagnose

and treat 'internal' diseases. The surgeons, fewer in number and enjoying higher status, would care principally for the health of the wealthier classes, while the barbers would relieve the ailments of the ordinary citizen (Capstick, 2000, p.68).

Two different corporations to do the same profession caused legal disputes and hostilities among its members. To harmonise these relations and attempt to accompany the more advanced medical developments on the European continent, on 24th July 1540, Henry VIII passed a law merging the Fellowship of Surgeons and the Company of Barbers. This formed the Masters or Governors of the Mystery and Commonality of the Barbers and Surgeons of London, which became better known as the Company of Barber-Surgeons. That same year, when Parliament approved the Anatomy Act, the same monarch granted the Company a licence to request four corpses of executed criminals for dissection purposes (Buckland-Wright, 1985, p.802). The Company of Barber-Surgeons was the top medical institution in London until Henry VIII created the Royal College of Physicians in 1558.

As if there were not enough 'differences' between barbers and surgeons, a third group, the physicians, also competed with the surgeons. As we see, master surgeons had academic education (although not always in medicine), but would restrict their practices solely to surgery. They and the physicians were entitled to wear an academic gown. The latter, however, were the elite and felt superior to the surgeons because they were specifically university trained in medicine. Many were clergy, had a doctorate in medicine, lived in cities and larger towns, and attended the Court, aristocracy and clergy. A basic difference between surgeons and physicians is that the latter would treat the disease based on historic teachings instead of empirical observation. They would use, for example, the uroscopy technique, a detailed examination of the urine. They also examined the pulse and checked the balance of the four Galen humours. The physician could prescribe medicaments and send the patient to the apothecary – the erstwhile pharmacist, – who would continue the treatment (Capstick, 2000, pp.69-71).

John Banister was admitted to the Company of Barber-Surgeons in 1572. The following year he was awarded his *Medicinae Baccalaureus* (MB) from Oxford University, which granted him a licence to work as a physician. Being both barber-surgeon and physician was a remarkable status at that time, which attests to Banister's competence and prestige (Buckland-Wright, 1985, p.809). In 1578, shortly before being appointed Chair of Anatomy, he published the book *The historie of Man sucked from the sappe of the most approued anathomistes...* . The work was considered a landmark and contained the concepts of the 'new anatomy' of the famous Flemish surgeon Andreas Vesalius (1514-1564) and his disciple and successor Matteo Realdo Colombo (1516-1559), an Italian from Cremona, and from the University of Padua, then the most important college of medicine in Europe (Buckland-Wright, 1985, p.810). It should be explained that, based on dissection of corpses, Vesalius revealed all the errors of anatomy made by Galen, who could only dissect animals since this practice on human bodies was banned in the Roman Empire (O'Malley, 1964, p.6). *De Humani Corporis Fabrica* (*On the fabric of the human body*) by Vesalius, published in Basel in 1543, was the first illustrated text on anatomy based on direct observation of the human body and not on Galen's book. Unlike the first English production in this field, *A profitable treatise of the anatomie of Man's bodie*, an essentially mediaeval work without illustrations, by Thomas

Vicary (1490-1561) (Sugg, 2000, p.6), Banister's book became a major benchmark that accelerated the break with the now obsolete Galenic anatomy.

In addition to his most famous book – which helped significantly to understand the cardiopulmonary blood circulation, – John Banister wrote many other works whose titles are given at the end of this article. The visual resources that he developed were fundamental

Figure 4: Greek physician Claudius Galen (131-200) was the most distinguished of his time. A born investigator, he compiled the medical knowledge of the ancients, to which he added his own findings. His theories and extensive works lasted uncontested until the Middle Ages. Print by an anonymous author.

Figure 5: Flemish doctor Andreas Vesalius, also known as Vesal or Vesalio (1514-1564), was physician to Emperor Charles V and his son Philip II. His most famous work, a critical treatise on Galen's work on anatomy, is *De Humani Corporis Fabrica*. It consists of seven volumes and is illustrated by Jan Stephen van Calcar, Titian's disciple and author of this portrait

Figure 6: Matteo Realdo Colombo, pioneer in the study of cardiopulmonary blood circulation, was assistant and successor of Vesalius in the Chair of Anatomy and Surgery at the University of Padua. He was Michelangelo's teacher and friend, also lectured at the University of Pisa and later at the Papal University in Rome. He wrote *De Re Anatomica* (Columbi, 1559), from which this image is taken


REALDI COLVMBI
CREMONENSIS,
In almo Gymnasio Romano
Anatomici celeberrimi,
DE RE ANATOMICA
LIBRI XV.

in teaching the new anatomy and progress of medicine, such as models of organs, assembly of a human skeleton, and vivisections, that is, operations on living animals to study the physiological activities. Another valuable contribution, supposedly commissioned by Banister around 1580, were what are called Anatomical Tables, a series of colour illustrations by an author as yet unknown. It is speculated that the anonymous artist is Nicholas Hilliard, or a disciple of his (Buckland-Wright, 1985, p.810). The tables, donated by doctor William Hunter (1718-1783), professor of medicine and physician to Queen Charlotte, are safeguarded in the Special Collections in the University of Glasgow library, Scotland (Maley, 2002).

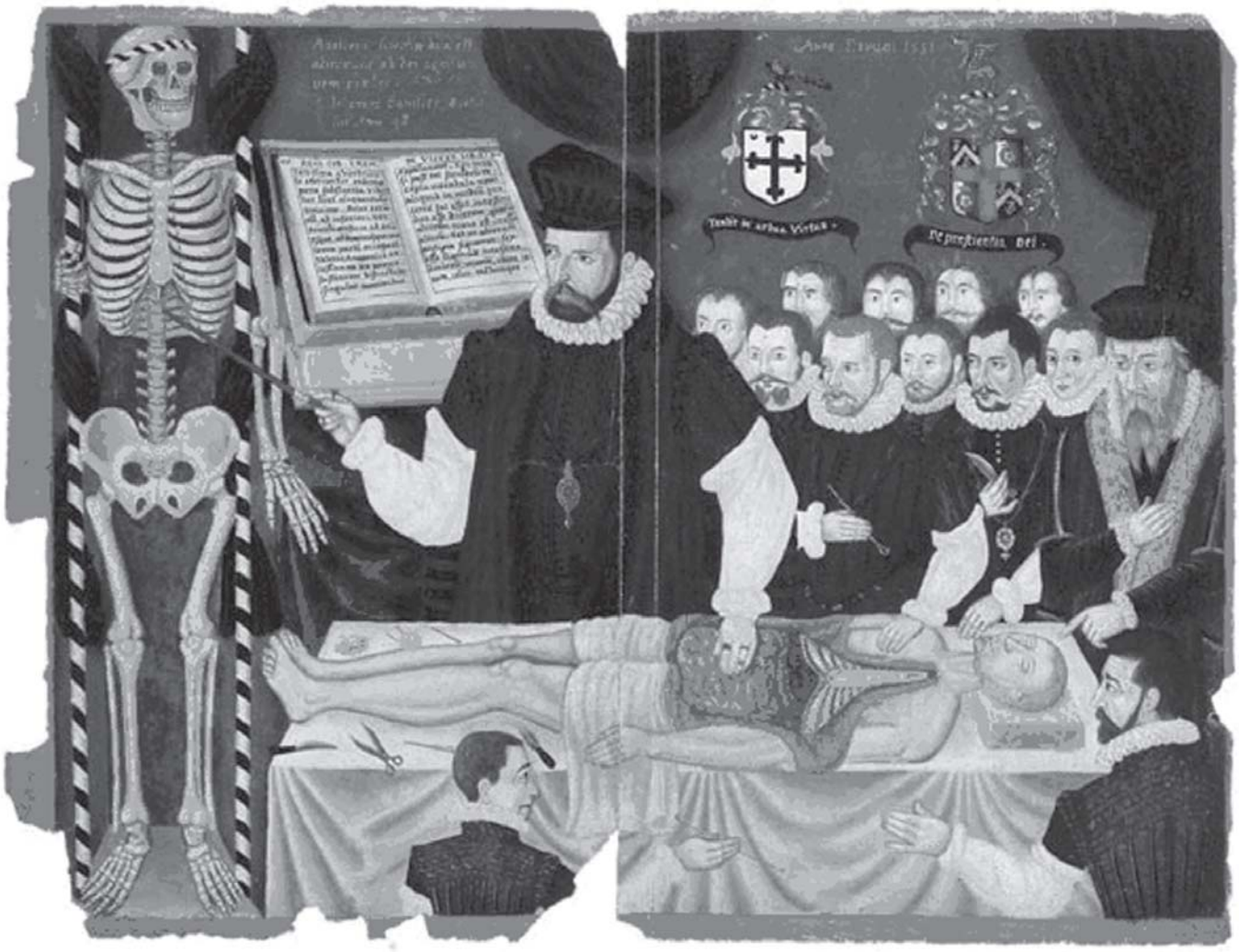

Figure 7: John Banister (1533-1610) giving a class on anatomy in the Barber-Surgeons' Hall. At his side are two master anatomists, one holding a probe and the other a scalpel. The book on which Banister based his lesson is *De Re Anatomica*..., by Matteo Realdo Colombo. Anatomical Tables, ca. 1580, anonymous artist (Glasgow University Library, Special Collections, Ms Hunter 364, v.1.1)

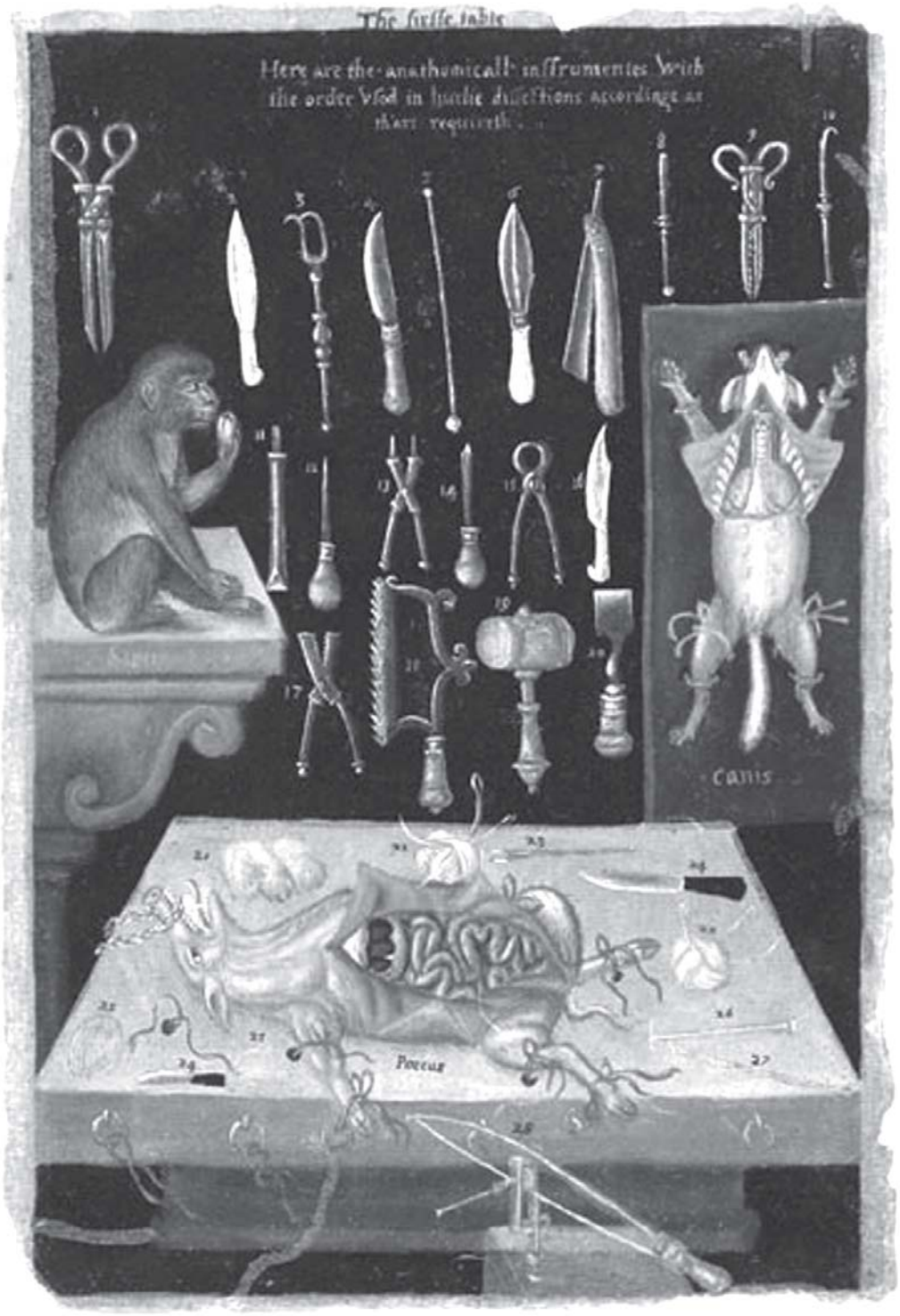

Figure 8: Surgical instruments and their order in which they were used to dissect a monkey, a dog and a pig (on the table). Anatomical Tables, ca. 1580, anonymous artist (Glasgow University Library, Special Collections, Ms Hunter 364, v.1.1)

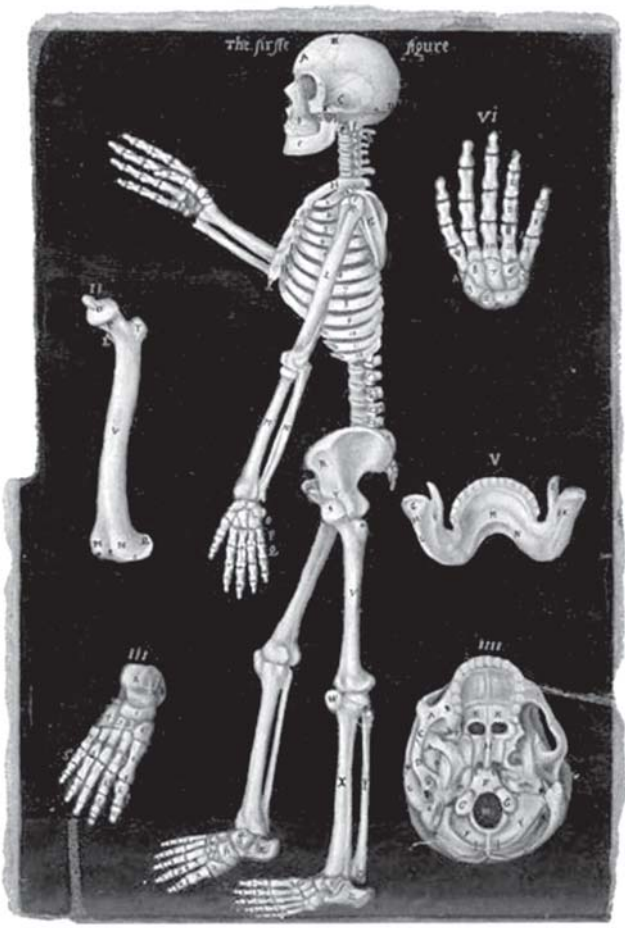

Figure 9: Side view of the human skeleton, with hand and feet articulations, skull and jaw. Anatomical Tables, ca. 1580, anonymous artist (Glasgow University Library, Special Collections, Ms Hunter 364, v.1.1)

Figure 10: Front veins of the human body. Anatomical Tables, ca. 1580, anonymous artist (Glasgow University Library, Special Collections, Ms Hunter 364, v.1.1)

Insalubrity on board

The risk of dying from an epidemic aboard ships was very often higher than the sailors' dying in combat or a storm. Since the casks, kegs, flagons and other recipients were not hermetically sealed, food, water and wine would deteriorate fast. Added to the terrible food conditions was the lack of the sailors' and passengers' hygiene, forced to live together in a small space for a long time. With rats, insects and all kinds of germs and viruses, ships were 'breeding grounds' for diseases that would decimate the fleets and native populations encountered on their voyages. A curious scene illustrates this insalubrity. When Magellan's squadron entered port on the island of Tidore, Moluccas, King Almanzor – or Sultan Mansor – went onboard one of the ships and held his nose because of the disgusting stench. The amazing justification by the Europeans for the visitor's gesture was on the grounds of religion – the smell of bacon – because he was a Moor (Muslim) and forbidden to eat pork (Fernández de Navarrete, 1837, t.4, p.74).

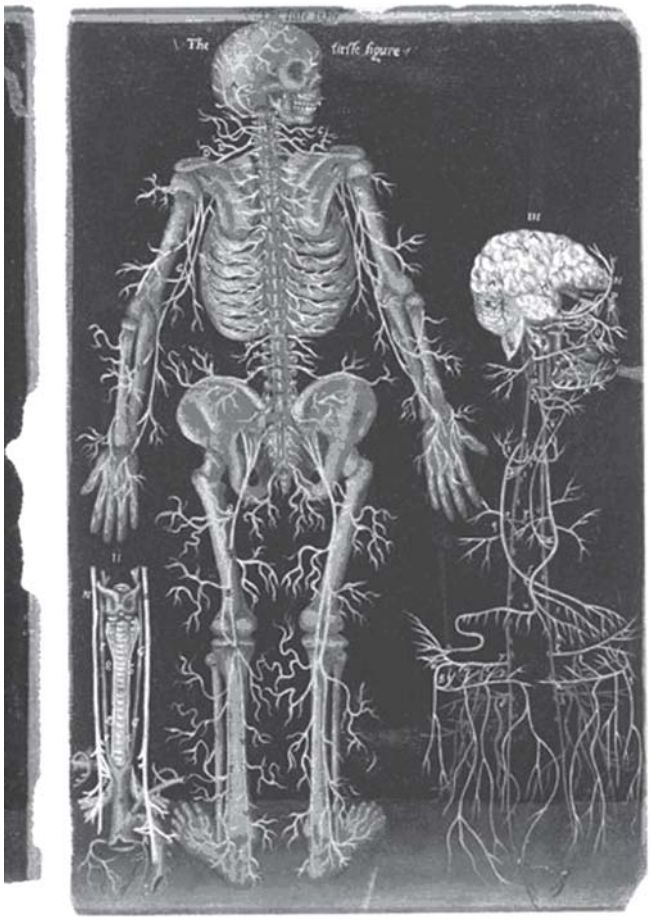

Figure 11: Nervous system. Anatomical Tables, ca. 1580, anonymous artist (Glasgow University Library, Special Collections, Ms Hunter 364, v.1.1))

Intoxications and infectious gastrointestinal ailments caused by eating rotten food and the poor quality of the water created the conditions for the dreaded 'bleeding chamber' or 'flux' (dysentery). Other fatal pathologies were smallpox, spotted fever or enxanthematic typhus, transmitted by clothes lice (Mena-García, 1998, p.385), grippe and tuberculosis. In addition to these diseases, the shortage of vegetables and fresh fruit (especially citrus fruit) during the long voyages caused widespread outbreaks of scurvy. More deadly that the conventional weapons of the Europeans was the virulence and plague that they carried, very often unwittingly, causing widespread epidemics in the New World, killing people with no immunological defence to withstand them. Diseases were also contracted onshore and aggravated by the circumstances of navigation, such as malaria, syphilis and parasites such as the jigger flea (*Tunga penetrans*). If not treated the infections caused by these insects would often result in terrible abscesses, necrosis and amputation of the toes.

The barber-surgeon in action

For these and other reasons, John Banister's services were required on several occasions during Edward Fenton's expedition. Off the African coast, approximately thirty sailors on the Edward Bonaventure fell ill with scurvy, were treated but died. While the ships anchored off the coast of Santa Catarina – where a small frigate was captured with Franciscan brethren and noblemen aboard, sailing up the Plate River –, Chaplain John Walker was near death. He was wasting away and prostrate, possibly suffering from severe dysentery. General Fenton fell ill after visiting him on the Edward Bonaventure, but soon recovered. After leaving Garopaba Bay, sixty men felt a very bad headache, followed by vomiting and diarrhoea, an indisposition that the chaplain and scrivener Richard Madox, another Oxford scholar, attributed to excessive drinking and devouring fish the day before. In this specific case – which seems to have been a viral gastroenteritis, – Banister bled them (Donno, 1976, p.259).

However, the occasion when the famous surgeon most needed his learning on this voyage was off the São Paulo coast. In the evening of 24th January 1583, the Leicester and Edward Bonaventure were anchored in Santos Bay when three Spanish ships of General

Diego Flores de Valdés' fleet sailing from the island of Santa Catarina, stealthily approached to attack them. The English waged a fierce battle with them, lasting through the night and part of the next morning. The outcome of the violent combat, in which these five warships with 140 pieces of artillery and around nine hundred men measured their forces, were six dead and thirty wounded. An Indian who went aboard the Leicester told General Fenton that the Spanish fared worse: one ship sunk, more than a hundred dead and many wounded, carried to the shore in three small boats (Taylor, 1959, pp.177-178). Soon afterwards, still in Brazilian waters, Banister was at the deathbed of chaplains John Walker and Richard Madox. His efforts to save them, however, had been in vain.

Leadership disputes and diverging interests were the reason for the failure of the mission assigned to Edward Fenton. The expedition degenerated into piracy and never reached the River Plate, returning unsuccessful to England. The Francis, a vessel belonging to the famous Sir Francis Drake, deserted in Santa Catarina. The galleons Edward Bonaventure and Leicester separated soon after the naval battle in Santos. From the report by Peter Jeffery, who sailed in the Edward, the first thing they did on English soil was to bury Captain Skevington and a cabin boy who both died of scurvy the day before. The wretched health conditions of the crew were summarised as follows: "when we came to Plymoth of 60 persons or therabouts not 6 sound or helthfooll, yet we wear glad thereof" (Taylor, 1959, p.265-266).

On 15th June, after 103 days without sight of land, the Leicester anchored in Kinsale, Ireland. Eight days later they left on the final stage of the voyage. Alleging that his lieutenant William Hawkins and trader Matthew Tailboys were drunk and attempting mutiny against him, Fenton order Hawkins to be shackled in irons. In the heated discussion the general threatened to break his teeth. He was so furious that, if he had not been restrained by Banister and other onlookers, he would have stabbed him (Taylor, 1959, p.286). At last, on 29th June 1583, the Leicester finished its voyage laying anchor in the Downs. The fate of the Francis was the most tragic: it was shipwrecked off the Uruguayan coast. Some members of its crew were captured by the Charrua Indians and others killed. After over a year in captivity, its captain John Drake – Sir Francis Drake's cousin –, managed to escape to Buenos Aires with Richard Fairweather and another young man (Hakluyt, 1599, p.727). On their arrival there they were warmly welcomed by the Spanish until their identities were soon discovered and were then arrested (Toribio Medina, 1956, vol.1, p.234).

In 1585, a few years after returning to his homeland, John Banister again joined another armada organised by the Earl of Leicester, this time to the Netherlands, to help the rebels in that region in their struggle for independence from Spain. After a decision by Queen Elizabeth in February 1593, the Royal College of Physicians in London – the cream of medical corporatism – also granted him a licence to exercise the profession of physician. So Banister became a distinguished barber-surgeon and physician who occupied the Chair of Anatomy in the Company of Barber-Surgeons until 1596 (Buckland-Wright, 1985, p.809). From this time until his death in 1610, he lived in Silver Street, in the parish of St. Olave, Aldersgate, London. He had a brother, Gabriel, whose son lived in Bedford. Although we do not know the details, we do know that Banister was summoned on several occasions

by the authorities to testify about his practice as barber-surgeon. He was, however, absolved of all the professional confusions in which he was involved (Pelling, White, 2004).

John Banister's contribution to the advance of medicine is undeniable. He is considered to have released English anatomy from its mediaeval slavery, shedding upon it the light of the Renaissance (Buckland-Wright, 1985, p.811). No one of such distinction in the area of health had visited Brazil ever before. The surgical operations that Banister must have done on the wounded in the battle of Santos Bay and his other interventions deserve to be included in the annals of Brazilian medicine.

Some works by John Banister

- *A needefull, new, and necessarie treatise of chyrurgerie*: briefly comprehending the generall and particuler curation of vlcers, drawen foorth of sundrie worthy wryters, but especially of Antonius Calmeteus Vergesatus, and Ioannes Tagaltius, by Iohn Banister... Hereunto is anexed certaine experiments of mine ovvne inuention, truely tried, and daily of me practised. Imprinted at London by Thomas Marshe, Anno 1575.
- The historie of man: sucked from the sappe of the most approued anathomistes, in this present age, compiled in most compendious fourme, and now published in English, for the vtilitie of all godly chirurgians, within this realme, by Iohn **Banister**, Master in Chirurgerie, and practitioner in phisicke. At London. Printed by Iohn Day, dwellyng ouer Aldersgate [and are to be sold [by R. Day], at the long shop, at the west doore of Paules], Anno 1578. Cum gratia & priuilegio Regiæ Majestatis.
- *A compendious chyrurgerie*: gathered, & translated (especially) out of Wecker, at the request of certaine, but encreased and enlightened with certaine annotations, resolutions & supplyes, not impertinent to this treatise, nor vnprofitable to the reader: published for the benefite of all his countreymen, by Ihon Banester maister in chyrurgerie. London, 1585. *Medicinae utriusque syntaxes*. English. Selections. Wecker, Johann Jacob, 1528-1586.
- *An antidotarie chyrurgicall*: containing great varietie and choice of all sorts of medicines that commonly fal into the chyrurgions vse: partlie taken out of authors, olde and new, printed or written: partlie obtained by free gifte of sundrie worthie men of this profession within this land. By Iohn Banester master of chirurgerie. London, 1589.
- *A treatise of chirurgerie*: briefly comprehending the generall and particular curation of ulcers. Collected out of severall famous authors, especially Antonius Calmeteus Vergesatus, and Johannes Tagaltius... Herunto is annexed certaine experiments... truly tryed... . London, 1633.
- *The workes*...: digested into five bookes. His cure, 1. Of tumours. 2. Of wounds. 3. Of ulcers... 4. Of fractures and luxations. 5. His antidotary... . To which is added a treatise for distilling of oyles... with a perfect order to prepare all minerals, and to draw forth their oyles and salts, etc. London, 1633.
- *A storehouse of physicall and philosophicall secrets*. Teaching to distill all manner of oyles from gummes, spices, seedes, rootes, hearbs, and mineralls... London, 1633.

– *The workes of that famous chyrurgian, Mr. Iohn Banester*: by him digested into five bookes, his cure 1. Of tumors 2. Of wounds 3. Of ulcers in generall and particular 4. Of fractures and luxations 5. His Antidotary, being a storehouse of all sorts of medicines belonging to the chyrurgians use: to which is added a treatise for distilling of ayles of all sorts, with a perfect order to prepare all minerals, and to draw forth their oyles and salts, & c. London, 1633.

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