

CAPTAIN COOK'S SURGEONS

by

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THE three voyages of Captain Cook were remarkable for their varied achievements which included geographical discoveries and their careful charting, astronomical observations, investigations of natural history and of the customs and languages of the natives (or Indians as they were often called), and lastly a knowledge of how to preserve the health of seamen on trans-ocean passages.

Serving on these voyages were a number of surgeons and surgeons' mates, ten in all, whose names are now little remembered. It is the purpose of this paper to describe these men and to touch upon facets of medical interest relating to the voyages.

Such a project is most conveniently considered within the framework of the three voyages and the following table shows the dates, ships and surgeons concerned with each voyage.

<i>First Voyage:</i>	1768-71 <i>Endeavour</i>	366 tons.
	William Munkhouse	Surgeon.
	William Perry	Surgeon's mate.
<i>Second Voyage:</i>	1772-5 <i>Resolution</i>	462 tons.
	John Patten	Surgeon.
	William Anderson	Surgeon's mate.
	<i>Adventure</i>	335 tons.
	Thomas Andrews	Surgeon.
	John Kent	Surgeon's mate.
	John Young	” ”
<i>Third Voyage:</i>	1776-80 <i>Resolution</i>	462 tons.
	William Anderson	Surgeon.
	David Samwell	Surgeon's mate.
	<i>Discovery</i>	300 tons.
	John Law	Surgeon.
	William Ellis	Surgeon's mate.

Cook was only a lieutenant when he was put in command of the first voyage, the purpose of which was to observe the transit of Venus across the sun, and to explore the South Seas. Wallis had recently returned from his circumnavigation and had reported favourably on Otaheite (now known as Tahiti), as a place of refreshment, and calculation indicated that the transit would be well seen from there.

Before entering the Navy, Cook had spent his youth serving in colliers bringing 'sea coal' from Newcastle to London, and he chose one of these ships for the voyage, because of her carrying capacity and her light draught, which would make it possible to lay her ashore for attention to the bottom. This ship,

renamed *Endeavour* of 366 tons, was built at Whitby in 1764 and armed with ten four-pounder guns and twelve swivels. She had a complement of eighty-four including several supernumeraries, the most distinguished of whom was Joseph Banks, later Sir Joseph Banks, President of the Royal Society for no less than forty-two years. Banks, a rich young man keenly interested in natural history, had done a great deal to instigate the voyage and put much of his own money into the scientific equipment. Others of the supernumeraries were Dr. Solander, a distinguished Swedish naturalist on the staff of the British Museum, and an astronomer Charles Green. All these were commonly referred to as 'The Gentlemen' by Cook in his log. The surgeon was William Munkhouse and his mate was William Perry.

The ship was victualled for eighteen months, and in addition to her usual stores and ammunition she carried beads, nails, axes and the like for barter with the natives, and a miscellaneous collection of animals, both as a source of fresh meat, and for liberating on the territories discovered in the hope that they would multiply. Also on board were apparatus for collecting and preserving botanical and zoological specimens, and perhaps surprisingly, several stills for obtaining fresh water from the sea.

The *Endeavour* sailed from the Thames on 30 July 1768, and after calling at Plymouth reached Madeira on 13 September where the first casualty occurred, the master's mate becoming entangled with the anchor as it went overboard and thus drowned. Here wine was taken aboard, and assistance in the collection of the plants of the island was given by a Dr. Heberden, brother of the more famous Dr. W. Heberden of London. After calling at Rio de Janeiro, where they were not well received, Cook proceeded to the neighbourhood of Cape Magellan, where during the course of a botanical expedition Banks and Solander narrowly escaped death by freezing, and their two Negro servants actually succumbed. They had fine weather for the passage round Cape Horn through the Strait of Le Maire on 20 January 1769, and turned north-west for warmer latitudes.

Land was not seen again until 4 April, and Cook anchored at Tahiti on 13 April, where, owing to the comparatively recent visit of Wallis, the inhabitants were familiar with Europeans. Cook drew up a code of rules for dealing with them, the first of which read 'to endeavour by every fair means to cultivate a friendship with the natives and to treat them with all imaginable humanity'. Nevertheless, both on this and the subsequent voyages, unfortunate incidents occurred, nearly always due to the thieving propensities of the inhabitants, resulting in bloodshed, and culminating in the tragic death of Cook himself on the third voyage.

One such event happened during the building of the fort from which the transit of Venus was to be observed, and Munkhouse the surgeon describes how, during an evening walk, he found the body of the shot native placed on a bier the frame of which was matted on posts five feet high. It was covered with a mat, overlaid by a white cloth with a wooden mace at its side, two coconut shells at the head and at the feet a bunch of green leaves and a stone axe.

However, friendly relations were restored, and in perfect clear weather the

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transit was observed on 3 June 1769. They sailed from Tahiti on 13 June, accompanied by an important native, Tupia by name, who was to be very useful in furthering their relations with the inhabitants of other islands. Banks showed a particular ability in making contact with and controlling the natives, and Cook accepted this as one of his duties. Another casualty in the crew now occurred, the boatswain's mate dying as the result of consuming a bottle of rum.

The *Endeavour* proceeded on a westerly course reaching the northern extremity of New Zealand on 7 October 1769, 130 years after Tasman's first visit. On 9 November the transit of Mercury was observed by the astronomer Green. They stayed in New Zealand waters until the end of March 1770, charting the whole of its 2,400 miles of coastline, and discovering evidence of cannibalism there.

Leaving New Zealand on 31 March the east coast of Australia was reached on 19 April and the place where they landed was named Botany Bay, from the profusion of the vegetation, which is a little south of the modern Sydney. Leaving here on 6 May the *Endeavour* proceeded north and skirted the whole eastern coastline of Australia for a distance of 2,000 miles. Here disaster nearly occurred, when the ship went aground on the Great Barrier Reef twenty-four miles from the mainland, and was badly holed. They jettisoned much of their heavy equipment and guns, and the leaks were stopped by an expedient suggested by Midshipman Munkhouse, younger brother of the surgeon, who proposed hauling a sail under the ship on which had been plastered a mixture of oakum and sheep's dung. Shortly after, Cook managed to find a convenient bay on the mainland where the vessel was laid ashore for temporary repairs. A number of the crew were by now showing signs of scurvy but they were able to recover on land. They sailed again on 4 August and passing through the Torres Straits reached Batavia (now Jakarta) in Java, where it was intended that the major repairs, due to the shipwreck, would be undertaken.

Unfortunately a serious outbreak of malaria now occurred. Banks and Solander were both dangerously ill, but Cook was little affected. Arrangements were made to nurse the sick ashore by native women, but no less than eight deaths occurred including Tupia and his servant. William Munkhouse the surgeon himself died on 5 November 1770, aged thirty-six, and his brother Jonathan the midshipman died on 6 February 1771 at the age of nineteen after the *Endeavour* had left Batavia.

William Broughton Munkhouse was born at Penrith, the son of George Munkhouse, and was baptized at St. Andrew's Church there on 29 October 1732. He qualified as a naval surgeon on 2 February 1758. He is mentioned occasionally in Cook's journals, once as taking divine service. Like many of the crews of these voyages he kept a journal which gave a good description of New Zealand and its inhabitants. Beaglehole says that this journal 'was composed with great vigour and lucidity and the writer was obviously an extremely intelligent man', but later he describes the diarist as 'a rather disorganized but perceptive man, another victim of intemperance'. At the end of the voyage the effects of the two Munkhouses were jointly valued at £229—a fair sum for those days—and Cook was in correspondence with their father about the disposal of the

property. On the death of Munkhouse, Cook appointed the surgeon's mate, William Perry, in his place, the entry in the log reading 'we had the misfortune to lose Mr. Munkhouse the surgeon of a fever after a short illness, of which disease several of our people are taken daily ill, which will make his loss the more severely felt. He was succeeded by Mr. Perry, his mate, who is equally well skilled in his profession.'

On taking over the medical stores Perry found a great deficiency and sought authority for replenishing them at Batavia to the value of £20. As there had been no opportunity for renewing the stores since leaving Rio, Munkhouse cannot be blamed for this deficiency.

When the *Endeavour* sailed from Batavia on 27 December 1770, forty of the crew were still sick and the rest in a weak condition, 'everyone sick', wrote Cook, 'except the sailmaker, an old man about seventy or eighty years of age and what was still more extraordinary in this man, his being generally more or less drunk each day'. The enfeebled crew were now stricken by 'a bloody flux' and on the way to the Cape of Good Hope, no fewer than twenty-four deaths occurred, including that of the old sailmaker. After recuperating at the Cape, the homeward voyage continued via St. Helena and shortly after leaving here, Lieutenant Hicks died of consumption. The English Channel was reached in July 1771, and the *Endeavour* anchored in the Downs on 12 July.

At the end of the voyage William Perry reported to Cook 'on the ship's health particularly scurvy', from which it appears that all the following substances were in use as presumed antiscorbutics, 'Sour Krout (cabbage cut small with added salt, juniper berries and aniseed, which is fermented and packed in cakes), mustard, vinegar, wheat, inspissated orange and lemon juice, Saloop, Portable Soup, Sugar, Melassies, Vegetables, were some in constant use'. Malt had also been suggested and utilized for making home brewed beer but was, as Perry says, almost excluded by the preceding. Cold bathing was encouraged and enforced by example, the allowance of salt beef and pork was abridged, and raisins were served with flour instead of pickled suet. Perry described sixteen cases of scurvy occurring on the voyage, and concluded in his own words 'it is impossible for me to say what was most conducive to our preservation from scurvy during the voyage so many being the preservatives used'. He finally came to the conclusion that malt was better than inspissated orange- or lemon-juice. Perry saw further service as surgeon successively in the ships *Scorpion*, *Dispatch*, *Salisbury* and *Superbe* which latter he left on 13 March 1782 and retired to a small house in Chiswick Lane which he had owned since 1779. In 1786 he moved to a larger house in Chiswick Lane next door, or next door but one, to the Manor Farm house, which had been built by the Lord of the Manor, Sir Stephen Fox, in about 1700. Perry bought this house from a Dr. Tenison and it is reasonable to suppose that he carried on a practice from there. In 1790 he is entered in the lists of those paying the annual church rate as William Perry *Esquire* for the first time. In 1791 he bought more land and paid on a rate of £6 for his garden, and in the same year he was one of those who examined and passed the churchwarden's accounts. He no longer appears

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as a householder after 1795 so presumably died or moved elsewhere at this time. There is no record of his death at Chiswick.

Cook's Second Voyage

The Admiralty now planned a second voyage to explore the Southern Hemisphere, mainly with the object of proving or disproving the existence of a Great Southern Continent, and it was decided to fit out two ships for the expedition.

Commander Cook as he now was, took charge, his ship being the *Resolution* of 462 tons, Captain Furneaux commanding the *Adventure*—335 tons. Both these ships were similar to the *Endeavour* and had been built at Whitby a few years previously. It was intended that Mr. Banks should sail again as their naturalist and he set about preparing for this on the grand scale, building at his own expense a number of deck cabins for himself and a retinue of assistants; this, however, rendered the *Resolution* so unseaworthy that they had to be removed, and Banks went off to Iceland instead. The Forsters, father and son, of German birth, were then engaged as naturalists, and two astronomers joined, Bayly on the *Adventure*, and Wales, subsequently to become mathematics master at Christ's Hospital, on the *Resolution*. Hodges was the official artist, and one of the lieutenants was Charles Clerke, mate on the first voyage. In all, the *Resolution* carried 112 persons and the *Adventure* 81, the ships being completely equipped to the wishes of Cook, including the usual quota of goods for barter, navigational instruments, animals to put ashore, and special warm clothing. The surgeons were John Patten on the *Resolution*, with William Anderson as surgeon's mate, and Thomas Andrews on the *Adventure* with two mates, John Kent and John Young.

The expedition sailed from Plymouth Sound on 13 July 1772, and arrangements were made by Cook in the event of the two vessels becoming separated, for them to meet at certain rendezvous. They reached Madeira on 29 July and proceeded thence to St. Jago, Cape Verde Islands, for fresh water and provisions. The first casualties occurred soon after, the carpenter's mate of the *Resolution* being drowned, and two midshipmen on the *Adventure* dying of fever. The Cape was reached on 29 October and here a Swedish naturalist, Dr. Sparrman, joined the expedition. They sailed again on 22 November to search for the Great Southern Continent, and from 14 December onwards they were amongst icebergs. Gales and fogs added to their difficulties and the sleet froze on the rigging as it fell, covering every rope and spar with transparent ice which made working in the rigging very dangerous. When the weather was calm they obtained fresh water by chopping portions of ice from the icebergs, up to fifteen tons being obtained in this way. Scurvy now threatened, but yielded apparently to the blunderbuss remedies employed.

On 17 January 1773, the Antarctic Circle was crossed for the first time in history, but further progress south was prevented by impenetrable fields of ice. During thick weather on 8 February the two ships lost contact and all efforts to find each other having failed, Cook proceeded south-east to continue his exploration of the Antarctic ice-field alone. Finding no Southern Continent and being

constantly surrounded by icebergs Cook decided to go on to New Zealand in order, as he always called it 'to refresh his people'. He reached South Island on 25 March 1773. The *Resolution* had been 117 days at sea and covered 11,000 miles.

Cook landed at Dusky Bay, as he had named it, and collected a boat-load of scurvy grass, celery and other vegetables and gave orders 'That they should be boiled with wheat and portable broth for breakfast and with pease and broth for dinner.' On 18 May they reached Queen Charlotte's Sound, now known as Cook's Strait, and there found the lost *Adventure*. Many of her crew were suffering from scurvy while only one of the crew of the *Resolution* had shown symptoms. Cook attributed this to his crew having spruce beer (an infusion from spruce trees which he had used while serving in Canada), fish, and vegetables, and he comments on the disinclination of crews to eat anything novel unless persuaded by the example of their superiors.

The expedition then completed a smaller circle of exploration, returning to New Zealand where the *Adventure* was once again lost, and all hope of finding her had to be abandoned. Cook now prepared to return to the Polar Seas in search of the elusive Southern Continent and once more crossed the Antarctic Circle, reaching farthest south in February 1774 when thick ice barred further progress. He turned north and explored numerous islands on the way back to New Zealand.

In his log, Cook discusses the vexed question of the introduction of venereal disease to the Pacific; the English accused the French and vice versa. But it is probable both were responsible.

The homeward voyage was easterly to Cape Horn and then south again to the Polar Seas, searching once more for the Southern Continent, before turning north for the Cape of Good Hope, where they learned that the *Adventure* had arrived there twelve months before, the crew of one of her boats having been murdered and eaten in New Zealand.

The *Resolution* turned for home via St. Helena, Ascension and the Azores, and on 30 July 1775, reached Portsmouth after a voyage of over 70,000 miles. During this time only four men had been lost, two only from sickness, which contrasted with the high mortality of the first voyage. As was his custom, Cook had given continuous attention to the diet of his crew and had insisted on strict measures of health being regularly carried out, including the drying of clothes and bedding and of the ship spaces below deck. Fires were lit in a pot which was lowered into the ship's well twice a week so that she could be dried throughout, and when the weather precluded this, the ship was smoked with gunpowder mixed with vinegar or water. Cook stressed the value of fresh water which he obtained at every opportunity, and he insisted on personal cleanliness and cold baths. In his final report he claimed that one of the most valuable features of the voyage was the discovery of the possibility of preserving health among a numerous ship's company for so long a period. He gave a list of articles which were most useful in preserving health. First, malt from which was made 'sweet wort' for men threatened with scurvy; two pints to three quarts daily were given, the dose to be decided by the doctor. Sauerkraut in quantities of 1 lb.

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was served to each man twice a week at sea. Portable soup, of which they had a large supply in cakes, was boiled with dried peas and fresh vegetables when obtainable. Rob of lemon and orange was also used—mainly, however, for those who had already developed scurvy. Cook also thought that sugar was antiscorbutic, and that the oil supplied by the Navy and the fat boiled out of beef and pork had a contrary effect.

Thomas Andrews gained his diploma on 3 August 1769, and took his examination for surgeon first rate on 8 February 1771, when he joined the *Somerset*, whence he was appointed to the *Adventure*. From the astronomer Bayly's journal, we gather that Andrews was a high-spirited and somewhat quarrelsome young man. On one occasion he had words with the Lieutenant of Marines and blows were struck, mainly by the surgeon. On another occasion several of the junior officers, including Andrews, demanded brandy from Bayly who, however, considered that they had consumed enough already and barricaded himself in his cabin. They proceeded to force the door and Andrews then threatened to strike Bayly on the head with a hammer; however, the noise aroused Captain Furneaux who put an end to the scuffle. There is little further mention of Andrews during the remainder of the voyage, but there is no adverse criticism of him by Cook. We have seen that *Adventure* had far more scurvy on board than the *Resolution*, however, which perhaps reflects on Andrews's care of the crew.

After the voyage Patten and Andrews put in a joint report on antiscorbutics to the Sick and Hurt Board. They commented unfavourably on marmalade of carrots, and favoured wort with portable soup with which they made 'nourishing messes with wild vegetables'.

Subsequently Andrews served in *Thetis*, *Russell*, *Buffalo*, *Monarchia*, *Nabob*, *Orford* and *Catherine the Great* which he left on 21 October 1790 and presumably retired from the Navy. A Mr. Andrews, Naval Surgeon, died at Brompton in 1813 but it is not certain that this is the same person.

John Patten, surgeon of the *Resolution*, was born in Northern Ireland probably in 1748, the son of the Rev. William Patten, and he joined from the *Senegal*. He was well thought of by the Forsters, and the younger, in his journal mentions Patten's 'skill and assiduity in preserving the health of the crew'. During a call at the Friendly Islands, Patten's gun was snatched by a native and an expedition was formed to recover it, during the course of which Lieutenant Clerke's gun was also stolen, and a native received a gunshot wound. Patten went to the latter's assistance, but having no dressings with him used a native dressing, a concoction of chewed sugar cane, which would no doubt have had some value in virtue of its osmotic effect. Patten also tested what was thought to be native arrow poison; he made a deep incision in the thigh of a dog and scraped in the material from several arrows and bandaged it up. The dog suffered no ill-effects. The best-known episode concerning Patten is described by Cook when the latter fell ill with a 'bilious colic' of which he wrote 'During which time Mr. Patten the surgeon was to me not only a skilled physician but an affectionate nurse, and I should ill deserve the care he bestowed on me if I do not make this public

acknowledgment.' There was no fresh meat on board and the Forsters' pet dog was sacrificed in order to make broth for the captain. Patten himself fell ill of the same disease, possibly food poisoning, but recovered without such an unusual diet.

Patten kept a journal which has unfortunately been lost and he also made a collection of objects and specimens. In his report Cook commented 'that the great skill, care and attention of Mr. Patten the surgeon has not a little contributed to that uninterrupted state of health we have all along enjoyed, for it cannot be said that we have lost one man from sickness since we left England'. Patten left the Navy after the voyage, and by 1779 was practising surgery and midwifery at 47 King Street, Dublin. He had presented his collection of specimens from the South Seas to Trinity College who made available a special room for it under the care of a Dr. Wilson. As a reward for his generosity Patten was on 2 August 1780, granted the honorary degree of Doctor of Physick. A considerable part of the Patten Collection was later transferred to the National Museum of Ireland in Kildare Street, where it may still be seen.

William Anderson was surgeon's mate on the *Resolution* which he joined from the *Barfleur*. He was a keen naturalist and kept a journal, which has been lost, and he made a collection of shells and botanical specimens. The Forsters, who were difficult people, were much annoyed that he did not hand these objects to them. Anderson also compiled Polynesian and Melanesian vocabularies and wrote a report on a species of fish which had caused severe food poisoning. On the return from the voyage Dr. Solander visited the *Resolution* at Greenwich and noted that Anderson had made a good botanical collection. Cook wrote of him as follows 'he had been of singular service by enabling me to enrich my relation of that voyage with various useful remarks on men and things'. All Anderson's scientific reports were written in Latin.

Of the two surgeons' mates on the *Adventure*, *John Kent* and *John Young*, little is known and they are not mentioned by name in Cook's log. However there is an amusing excerpt, again from Bayly's journal, relating to John Kent. Bayly writes as follows:

last night Mr. Scott the Lieutenant of Marines seemed to be out of his mind as he ran about almost naked, talking a great deal of incoherent stuff. The 8th in the evening Mr. Scott came into my cabin and told me he had something to intrust me with viz. that he had that evening asked Dr. John (Kent) the surgeon's 1st mate to drink tea with him (they frequently drank tea together being very intimate) and that there was a pill in his tea which he said that Dr. John put there in order to poison him he imagined, but luckily he did not swallow it. . . . But it appears that he was mad and there was nothing in his tea.

Although Lieutenant Scott seemed to have been suffering from a classical form of insanity, it is interesting to note that he was not put on half pay until six years later.

Third Voyage

Cook had now been promoted to Captain, made a Fellow of the Royal Society, and offered the post of Captain of the Royal Hospital at Greenwich. But he was not allowed to enjoy these honours for long as the Admiralty now decided

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on a third voyage, the object of which was to discover a passage from the Pacific to the Atlantic to the North of America, and to restore Omai, a native brought home by Furneaux in the *Adventure*, to Tahiti, and further to present these islands with 'some of the most useful European animals and garden seeds'.

The *Resolution* was again fitted out, and a second ship, the *Discovery* of 300 tons under Lieutenant Clerke, who had been on the two previous voyages, was to accompany her. Surgeon to the *Resolution* was William Anderson who had been in the *Milford* since the termination of the second voyage. His mate was David Samwell. The *Discovery* carried John Law as surgeon and William Ellis as mate. The sailing master was Bligh, later to become famous for his voyage of 3,618 miles in an open boat following the mutiny on the *Bounty*. Bayly again sailed as astronomer with Lieutenant King as assistant; Anderson was the official naturalist, and Webber the artist.

The expedition sailed on 12 July 1776 via Teneriffe, arriving at the Cape of Good Hope on 18 October. Here Anderson set off in a wagon with five others looking for plants and insects. They were entertained by a rich wine grower who astonished Anderson by providing a band to play during dinner at his house. On the return journey they were troubled by vast numbers of midges and sandflies. Next Kerguelens Land was visited, of which Anderson wrote 'that this barren spot affords a scanty field for the naturalist'. He described a saxifrage-like plant and a cabbage plant with the acrid taste of the antiscorbutic plants.

They then proceeded due east and arrived at the south coast of Van Diemen's Land (Tasmania) on New Year's Day 1777 and thence on to Queen Charlotte's Sound, New Zealand, in February. Anderson busied himself at both these places in writing up the birds, animals and human inhabitants—again noting the value of scurvy grass and wild celery in soup. He compiled vocabularies of the Maoris of New Zealand and of Tahiti, showing that they were very similar. While at New Zealand they were able to discover the circumstances of the massacre of the boat's crew of the *Adventure* on the previous voyage.

The expedition continued to the Friendly Islands where on his visits ashore Cook was always accompanied by Anderson who acted as interpreter. He completed vocabularies of both the Friendly and Society Islands, making notes on the native method of embalming. The Society Islands were left on the 8 December 1777 for the long voyage to the west coast of North America, and this was reached in March 1778 at Nootka Sound, on what was later named Vancouver Island. Anderson now employed his gradually failing strength in making another vocabulary; his health had been deteriorating for the past year and he made a will on the voyage, mentioning an uncle, and two sisters, Betty and Rabinah. By June he could no longer work and he died off the west coast of Alaska on 21 July 1778.

Cook was considerably affected and wrote as follows:

Mr. Anderson, my Surgeon, who had been lingering under a consumption for more than 12 months, expired between 3 and 4 this afternoon. He was a sensible young man, an agreeable companion, well skilled in his profession and he had acquired a considerable knowledge of other branches of science. The reader of this journal will have observed how useful an assistant

I had found him in the course of this voyage and had it pleased God to spare his life, the Public, I make no doubt, might have received from him such communications on various parts of the natural history of the places we visited as would have abundantly shown that he was not unworthy of this commendation. Soon after he had breathed his last, land was seen to the West about 10 leagues distant. It was supposed to be an Island and to perpetuate the memory of the deceased for whom I had a very great regard I named it Anderson's Island.

Unfortunately it was not an island, but Anderson's name is commemorated in the genus of plants *Andersonia* found in Australia.

William Anderson was born in Scotland in about 1748 and was therefore only thirty when he died. From his knowledge of botany it is surmised that he had been a student at the Edinburgh Botanical Gardens. Some six years later the official account of this voyage was published in three volumes, the first two by Cook and the third by Captain King. Much of Anderson's journals were incorporated in these volumes and the editorial preface pays a considerable tribute to him. Anderson left his books, which included *Dampier's Voyages* and Hawkesworth's account of Cook's first voyage, to the surgeon's mate David Samwell, and his papers to Joseph Banks. After the voyage his collection of objects of natural history was dispersed; it is thought that some may have been left in Siberia, others probably went to Vienna after exhibition at the Egyptian Hall, Piccadilly, and some botanical specimens are still in the Natural History Museum at South Kensington. It is clear that Anderson had the greatest scientific abilities of all Cook's surgeons and his early death was a sad loss to science. Following his death John Law was transferred as surgeon to the *Resolution* and Samwell was promoted to surgeon of the *Discovery*, Ellis remaining as surgeon's mate.

The voyage continued northwards through the Behring Straits until further progress was halted by ice and Cook decided to return to a warm climate to refit before making a further attempt next season. They anchored for this purpose in Kealakekua Bay, Hawaii, on 17 January 1779. Although relations with the inhabitants were at first good, they gradually deteriorated and finally one of the ship's boats was stolen. Cook went ashore with a small party to take the native chief as a hostage, as was his usual practice when episodes of this sort occurred but while engaged on this attempt he met his death. The best account of this lamentable event is by Samwell which he published under the title of *A Narrative of the Death of Captain Cook to which one added some particulars concerning his life and character and observations respecting the introduction of Venereal Disease into the Sandwich Islands*. Perhaps rather an incongruous mixture of subjects.

After the death of Cook, Captain Clerke took command of the expedition and Captain King continued Cook's log. They sailed once more to the Far North through the Behring Straits, crossing the Arctic Circle in a last attempt to find a passage to the Atlantic, but ice again prevented further progress and to the immense relief of the crew they headed south again to Kamchatka in Siberia. Very friendly relations were established with the Russian garrison there, and as the hospital was found to be in a deplorable state with numerous cases of scurvy, Clerke sent his surgeons ashore to help.

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Clerke himself had now for some time been unable to leave his bed and on 22 August 1779, he too died of consumption at the age of thirty-eight. King wrote of him as follows:

his very gradual decay had long made him a melancholy object to his friends; yet the equanimity with which he bore it, the constant flow of good spirits which continued to the last hour, and a cheerful resignation to his fate afforded some consolation. The vigour and activity of his mind had in no shape suffered from the decay of his body.

In these few lines are felicitously combined a classic description of phthisis as we used to see it, and a kindly obituary. Five years later King himself was also to die of consumption at Nice when he was attended by John Law, the surgeon of the *Discovery*.

The voyage home, which need not detain us, was via Japan and China to the Cape, and thence without a call round the north of Scotland to the Thames.

David Samwell, born in 1751, was the son of William Samwell (or Samuel) Vicar of Nantglyn, and grandson of Edward Samuel of Llandulas, writer of both verse and prose. In addition to his publication, just noticed, in which he strongly maintained that Cook's ships did not introduce syphilis into the Pacific, he also commented on Cook's views on scurvy, mentioning that the *Resolution* lost only five men on the voyage, three being ill before they sailed, and the *Discovery* lost none. Samwell subsequently served in the *Crocodile*, *Pegale*, *Kittael*, *Tremendous*, *Marlborough* and *Unicorn* which he left on 3 July 1796, and was then for a time in charge of prisoners-of-war at Versailles. After his retirement he lived a bachelor life in London at 117 Fetter Lane and interested himself in literary pursuits. He wrote poetry both in English and Welsh, including a piece 'The Negro Boy'. He became first, Secretary, and later President of the Gwyneddigion Society. He died on 23 November 1798, and was buried on 2 December in the churchyard of St. Dunstan in the West. (The *Dictionary of National Biography* wrongly says St. Andrew's, Holborn.)

Of the surgeon *John Law*, and surgeon's mate, *William Ellis*, perhaps I may be allowed to quote, or slightly misquote, Samuel Johnson,* 'They are persons of whom I regret my ability to give a sufficient account; the intelligence which my enquiries have obtained is general and scanty.' As already mentioned John Law attended King in his final illness at Nice and kept a journal of the voyage which is preserved in the British Museum. *William Ellis*, surgeon's mate, also wrote an account of the voyage. By instructions of the Admiralty all individual journals were considered confidential and had to be handed in at the conclusion of the voyage. Ellis, however, in contravention of this instruction sold his narrative to a bookseller for fifty guineas and it was published in 1782. He was a competent artist in water-colours and ten of his paintings of the scenery of Pacific Islands have recently come into the possession of the National Maritime Museum, Greenwich.

In conclusion I shall discuss briefly the diseases which occurred on these three voyages. The high mortality on the first voyage was associated indirectly

* *Lives of the Poets*, Dublin, 1779-1881.

with the stranding of the *Endeavour* on the Great Barrier Reef, necessitating a call at a port with full facilities for major repairs. As a result the unhealthy port of Batavia was visited and two lethal diseases brought on board. These were first, malaria, which caused the death of eight of the crew, including the surgeon, and the serious illness of over thirty others. When the *Endeavour* left Batavia, dysentery, or possibly typhoid, acquired there attacked the enfeebled crew and twenty-four more deaths occurred.

Pulmonary tuberculosis caused the deaths of Lieutenant Hicks on the first voyage, and of Captain Clerke and William Anderson, on the third voyage. Clerke was present on all three voyages and may therefore have been infected by Hicks with whom he would have been in close contact on the first voyage. As we have also noted Captain King on the third voyage died of consumption five years later and may have been infected by Clerke or Anderson. Later Vancouver, who was on the second voyage and gave his name to Vancouver Island as the result of subsequent explorations, also died of consumption. There was, of course, no knowledge of the infectious nature of tuberculosis but it has long been recognized that consumption has a high incidence on shipboard and its occurrence in these voyages, where overcrowding, ignorance, and hardship, and at times an inadequate diet were all present, is not to be wondered at. Curiously, most of the deaths from this disease seem to have occurred amongst the officers.

Scurvy was undoubtedly the greatest hazard for world voyagers at this period and it was commonplace to lose a considerable percentage of the crews from this cause alone. It is popularly believed that Cook was responsible for its conquest and this is clearly stated in the *Encyclopaedia Britannica* (11th Edition). Certainly Cook was successful in eliminating serious scurvy on the vessels in which he sailed personally although ten minor cases occurred on the first voyage. His success must have been chiefly due to his rigid custom of collecting so-called scurvy grass or wild celery from every island he visited, and also the use of spruce beer—lands were numerous in the Pacific and there was no problem here. Away from land, and one such passage lasted 117 days, Cook relied on sanitary and hygienic measures together with the multiplicity of substances described by William Perry, namely sauerkraut, mustard, vinegar, wheat, orange- and lemon-juice, but this was used in the form of 'rob' or inspissated juice which must have lost its vitamin C content by prolonged boiling; also saloup, portable soup, molasses, vegetables, and marmalade of carrots.

As Perry concluded in his report, so many preventives were used that it was impossible to say which was most conducive to their preservation. We can only assume, I think, that these substances taken in variety and considerable quantity were able in virtue of a small vitamin C content, to delay the onset of serious scurvy. On the second voyage it will be remembered that whereas the *Resolution*, Cook's ship, had little or no scurvy, the *Adventure* with a captain and surgeon less insistent on the régime, suffered considerably from this cause.

In their recent volume on *Medicine and the Navy 1714-1815*, Lloyd and Coulter (1961) take the view that Cook's three voyages actually delayed the introduction of the best antiscorbutic, lemon-juice, to the Navy. They show that James

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Lind who had been appointed Physician to Haslar Hospital in 1758 had published as far back as 1753 incontrovertible evidence based finally on a controlled trial, that lemon-juice was the most effective antiscorbutic. However, the inertia of officialdom and the contrary views of distinguished rivals prevented the final practical adoption of his views for forty years. But it is interesting to note that so far back as 1593, Sir Richard Hawkins had described sour oranges and lemons as being the most fruitful for this sickness.

This account of Cook's surgeons necessarily remains incomplete through lack of available information. They were men of varying aptitudes and capabilities but none were ever criticized by Cook in his logs and each in his own way contributed to the success of these epoch-making voyages.

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