new concepts added, and ancient material removed. Few editors revise the text for words such as brain, even when the definition is erroneous. They are too busy inserting the latest words and are inefficient in removing the barnacles. The supplements of the *Oxford English Dictionary* do not correct errors in the definition of brain, but add compound words such as brainstorm, and electronic brain (an unsuccessful description of the computer). The definition of brain in Dorland was incorrect and unchanged from 1917 to 1981. The improved version still defined a dead brain.

Johnsonian excellence

I conclude that if we seek a definition of brain medical dictionaries are an inferior source; the latest is not the best. Samuel Johnson in 1755 set a standard of excellence. What then may be said of the high art of making a dictionary more than 200 years later? Do vertebrate lexicographers have brains? Is the computer a brain destined to save medical lexicography? If not, where do we obtain help?

Can a brain be defined?

Finally, what is a brain? Can we synthesise the various definitions? Consider the leading nouns: mass, collection, substance, part, material, cerebrum, and encephalon. These nouns are so disparate that we are amazed that the same word is being defined. We can argue, however, that a general word is needed, and then is particularised, but the details also are diverse. Some lexicographers, for example, say that the substance of the brain is jumpy. Uniformity is noted only with regard to location of the brain: skull, head, cranium, or cranial cavity. Use of dictionaries allows us to be certain only that the brain is something in the appendage rostral to the neck.

I offer, for target practice, the following definition of a vertebrate brain: that part of the central nervous system in the skull; connected to the spinal cord; the seat of sense, motion, thought, and of human speech; comprising two contiguous hemispheres connected by commissures; a cortex of neurons, the gray matter, surrounds both white matter and various subcortical neuronal clusters.

Three into five won't go

T B ANDERSON

Doctors who practise in professional isolation do so mostly from deliberate choice. Dr Edward Wilson in Antarctica or Dr Albert Schweitzer in central Africa accepted a hostile environment as part of their terms of service. For me it was different. I joined the Royal Fleet Auxiliaries (RFA) after 35 years in general medical practice, hoping to see the world. My most exotic tour to date had been with the Royal Army Medical Corps in Palestine during the troubles after the second world war. And I had brief acquaintance with the RFA in 1965 with the Royal Research Ship *Discovery* on an oceanographic survey of the mid-Atlantic. Both experiences gave me a taste of clinical independence. In 1945 I was isolated by snow in the Lebanese Alps with another RAMC subaltern. We had two emergencies—an acute appendicitis in an infantry colonel and a Turkish civilian with a fractured femur. We had inadequate equipment to deal with either. By the time that medical supplies had been dropped by air the colonel had responded to conservative treatment, Fowler's regimen, and sulphonamides. His appendix was removed at home and it was said, so he told me 30 years later, to show evidence of recent inflammation. We did our best for the Turk: with a Thomas' splint and a bucket of water to produce the tractive force. Our success was measured; after four days on traction the bad leg was half an inch longer than the good one. But our success was not rewarded; in the French hospital in Beirut the surgeon saw economic expediency in terms of amputation.

The *Discovery* was 400 miles due west of Lisbon when a young seaman reported his abdominal pain. He had appendicitis. I had no medical help, but the ship had a good, well equipped hospital. In the eyes of the ship's company there was no reason why their surgeon should not do the necessary operation. They did not know that I had never taken out an appendix without being supervised. I opted for Fowler's regimen again, adding chloramphenicol for good measure, and the patient underwent interval appendicectomy in the Royal Naval Hospital, Stonehouse.

On 30 December 1981 I joined RFA *Olna* in Portland. I was excited, because going afloat is always exciting, but apprehensive at the prospect of having to face unforeseen clinical problems. But my first trip, to the Persian Gulf, gave me no more than a glimpse of the other side of the Middle East of which I had learnt a little when in the Army; Oman seemed like a very sunburnt Aldershot. On our way home we called at Haifa, where I had been stationed for a year in Peninsula Barracks, destined we believed in 1947 for demolition. They still stood in 1982 and were occupied by the Israeli navy. A peep through the perimeter wire recalled dormant memories.

At war with Argentina

I was quite settled into the seagoing life by the time we got home to Gosport, but the suspicion that we were to be involved in the war with Argentina became a certainty. I was unsettled again and began to feel the butterflies in the stomach; I knew nothing of naval warfare. The Royal Naval Hospital, Haslar, proved a rich source of help and reassurance of every kind; the anaesthetic department in particular allowed me to stand in on inductions and to practise intubation. Through the complexity of recent technical advances I discerned the truth; the techniques of yesteryear were still feasible so I could, if needed, use pentothal, gas, and oxygen with trilete or ether. The ship's Boyle's apparatus took on a friendly importance, and ceased to be just a piece of furniture; I was quite put out when a few days before we were due to sail the hospital anaesthetic technician pronounced it unusable. A replacement arrived in the nick of time; shining and with a confidence of its own it seemed to anticipate my conjectures—those amputations, blast injuries, penetrating wounds of chest and abdomen, brain damage. . . .

We sailed from Gosport on 10 May. HMS *Sheffield* had already been lost and we had on board a Royal Naval lieutenant, trained in nuclear, biological, and chemical warfare, who gave lectures based on the analysis of the damage reported from the *Sheffield*. He instructed us on how best to reduce damage to our own ship. He emphasised the danger caused by the combustion of insulating plastics, releasing bromine and cyanides. He left the ship by helicopter as we passed Ascension Island. I mulled over the facts and lost my only crumb of comfort. I had with others believed that

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our ship would not need or be required to come within range of Argentinian aircraft. Bombs were irrelevant; the wily Exocet directed from a distance could strike the target right on the ship's hospital which might spare me from too great an involvement. But it was patently essential to provide a secondary medical aid post in the after end of the ship. The lieutenant's dicta were prompting ever more lurid prognostications; butterflies were in almost constant attendance.

Adrenaline antagonises efficiency. If my output of adrenaline was like this before the event how would it be in the event? Having no medical assistant I could not rely on him to react correctly; I could not even discuss the likely eventualities. But careful preparation

Ships in San Carlos Water.

might reduce error. Stores were culled—there were large quantities of outdated and outmoded materials on board—deficiencies were reviewed yet again, and check lists were felpenned all over the hospital bulkheads. As I did the latter I of course remembered the bromine and cyanides.

At 20 knots steaming it took 18 days to traverse the 8000 miles to the territorial exclusion zone. The day before we entered we had to replenish the frigate HMS *Glasgow*. Two weeks before she had been holed just above the waterline by a bomb and, with the failure of her one remaining main engine on the return journey, she was destined to limp home under her own steam at walking pace. The despondency of her crew seemed to seep across the water to us. We joined the carrier group on 27 May in thick fog. Seamen do not usually favour fog but we welcomed the dual protection of warships and fog. The Argentinians were cautious about deploying their aircraft without there being a reasonable chance of success. The fog lifted on 1 June and we began to have frequent "red alerts." On 3 June we entered San Carlos Water to deliver fuel to the inshore establishments. This upended all our predictions; there was no point in making further preparations. I resorted to my sketch book which I kept in my hip pocket; this distracted me from my premonitions. The entry into San Carlos was weird. We were still operating on GMT and as we had moved four hours westward since leaving Gosport it was still dark at 10 am. This day there was a thin moonshine which emphasised the reunion with terra firma. I had never before been out of sight of land for so long. The featureless Falklands made a strange backdrop as the sun came up pink and orange among banks of soft cumulus clouds. HMS *Fearless* and the *Penelope* were with us and the *Atlantic Causeway* steamed in just ahead.

Butterflies replaced by dread

Fortunately the development of hostilities had distracted the attention of the Argentinians from San Carlos to Goose Green, so we missed the heavy strafing. Officers from RFA *Stromness* visiting on board described narrow misses, but the only aircraft we saw were probably spotting and not likely to attack us. The attack which I

most vividly recall was only an empty threat, but it replaced the butterflies with the leaden sense of dread. One day we were told to expect a gas attack. Activity was intense as respirators, protective clothing, and chemical antidotes were rushed out to the troops. I reflected that, although humanity had succeeded in suppressing the use of chemical agents during the second world war, this conflict might be setting the precedent for a future war. I suppose that this was a reactionary view; chemical agents, nerve gases included, must seem like peanuts to the modern generation and in comparison with nuclear fission. After a day or two without any gas appearing I decided that the remnants of the Third Reich must have been whispering in Galtieri's ear. The threat was Hitlerian in style. Now it seems more likely that those in command at whatever level saw the need to distribute the anti-gas equipment and use the event as an opportunity for an exercise to keep us on our toes.

On 9 June, a sunny afternoon, HMS *Avenger* was alongside taking on fuel; alarms sounded and HMS *Plymouth* steamed into the sound with heavy smoke belching from her funnel and her stern. The *Avenger* cast off and went at all speed to her aid, while she came to anchor about 300 yards off. She had been hit by four bombs but vigorous fire fighting saved her and she lived to fight again.

The declaration of the cessation of hostilities was a protracted affair, but this was my war. I stored some memories—helicopter trips to the *Hermes*, across to the hospital in Port Stanley, and on another occasion to visit the *Uganda*. I came away with the knowledge that modern high velocity projectiles if more lethal make for cleaner mutilation of limbs. And speedy evacuation of casualties by helicopter reduces the incidence of deep infection of tissues, particularly of bone. On 17 September we returned to Gosport to a cheering and tear jerking welcome, the Highbury Brass Band performing nobly with "Land of Hope and Glory" and other appropriate music.

Just over a year after the Falklands affair I was on the *Olna* again, enjoying a Falklands summer. And this time we visited South Georgia. "God must have been angry when he created this place," muttered our navigator as we closed the island. It has an awesome magnificence. The fishing in the seas around South Georgia attracts

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many trawlers from the Eastern Bloc countries; on 11 February 1984 we saw a fleet of 30 trawlers and about 1000 sea birds, albatrosses and sooty shearwaters, in attendance. Iron curtain ships carry on communication functions directed at their potential enemies; the Navy must presumably be interested in this collateral activity. There were four warships in our group; one of these would be deployed to South Georgia each fortnight with the *Olna* as replenishment tanker. In a three month period in the south Atlantic the *Olna* went to South Georgia three times. The island is 800 miles from Port Stanley, which has the only hospital between Cape Horn and the Cape of Good Hope. The sense of being apart is not obvious until things go wrong.

Our first trip to South Georgia was before Christmas. The day that we left Grytviken to return to Port Stanley one of the cooks reported with a belly ache which he had first noticed the previous day. He had appendicitis. Once again and with conviction strengthened by earlier experience we resorted to Fowler's regimen. "We" included a naval leading medical assistant, a splendid nurse with doctorly skills. As soon as we were within helicopter range of Port Stanley our patient was evacuated to hospital where his appendix was removed. The surgeon later reported that it was near to perforation.

British Military Hospital, Port Stanley

Operation off Port Stanley

The occasion called for commemoration if not celebration. I sat down and wrote a piece for the journals entitled "They always come in threes" being an account of three cases of appendicitis treated conservatively. Of course Fowler was recognised deferentially. By the time that the article was in typescript we were leaving South Georgia for the second time, and I was confronted in the engine room alleyway by a grey faced junior engineer officer asking to see me urgently. He had no previous history. I found a strangulated left inguinal hernia. The tightly distended sac augured ill for a non-incisive surgeon and preliminary attempts at reduction under diazepam failed.

We washed out his stomach and I asked the medical assistant to prepare for surgery and then sat down to discern what surgery was appropriate. I revised the anatomical details of a region that had consistently bugged me in student days, studying the diagrams with a sense of impending failure such as a battalion commander might have felt looking at Hill 60 in the first world war. I made sketches, if only to fix the data in my mind. I particularly disliked the bit about maldescent of the testis; the least I could expect would be the reduction of this young man's fertility. I cursed myself for having tempted fate and tore up "they always come in threes."

The patient was given morphine and atropine, anaesthetised with thiopentone, gas, and oxygen, and the area was infiltrated with lignocaine. The worst moment came with the skin incision over a sac so distended that it looked like a toy balloon about to pop. I do not now believe that I have the delicacy of touch to spare the deeper layers but once the cut had been made there was no looking back. The left testis was maldescented.

"It was difficult to keep the testis out of the way while incising the external oblique aponeurosis, which was divided about two thirds of its length towards the deep ring. The spermatic cord and the ilioinguinal nerve were identified but it is feared that the latter was nipped in the resuturing. At this stage the sac contents were reduced, (discoloured small bowel), and it seemed more important to effect closure than to attempt any repair."

This account was part of the report that accompanied the patient on his way to Port Stanley the next day. It has a rather pretentious ring that smacks of the student seeking to impress his chief; of that I

am ashamed. In fact conditions were quite different. As soon as the gut had gurgled back into its proper place I made all haste to get out of the inguinal canal, though the medical assistant continued to maintain a very good anaesthetic. He reassured me by saying that there was no hurry; he was patently enjoying himself much more than I was. At about this time the senior purser, who had kindly offered to help, passed out. I had already been operating for more than an hour and withdrawal was proving even more tedious than had the exploration. We had no liberal supply of warm saline, and the wound was so full of dried clot as to seem dusted with coffee grounds. Bleeders were taking me minutes to ligate, not seconds. It was two and a half hours after kick off that we gratefully dressed the wound and turned to attend to the purser. He, with the resilience of his kind, was already preparing hot sweet tea for us.

Next morning I flew with the patient by Sea King helicopter to Port Stanley, where I gratefully handed him over to the RAMC surgeon, and he quickly made good the results of my anatomical gardening. He confided in me a week or two later: "Next time you have that problem all you need to do is to divide the external ring," which information I know I should have accepted with gratitude. Instead I dissolved in inordinate laughter, in which, recognising my white hair, he joined.

The patient recovered and I was pleased to serve with him on the *Olna* later in 1984. He told me that he had no recollection of the preparations for the operation; he could not even remember the stomach wash out and I was glad to hear that.

Call for a neurosurgeon

On 2 February 1984 we were on our way, some 200 miles, to Port Stanley. I was wakened by the captain who showed me a signal that he had just received. This described the injuries to a Russian trawlerman who had been seen by the RAMC officer to the garrison on South Georgia as in need of immediate neurosurgery. We were ordered to return on reciprocal course to pick him up. Once in helicopter range the leading medical assistant was sent with the aircraft to the trawler; he met the woman medical officer, who

Falkland Islands Co.

greeted him like a long lost brother. We received the patient on board at noon. He was deeply unconscious, partly because he was full of morphine and of many other drugs, many of which I could not identify. His slight build and his well kept hands did not fit the description of trawlerman; he may have been a communicator, a scientist, or a political agent. His injuries involved his head and his chest. The damage to the central nervous system could not be evaluated at first because of the morphine.

"2 February, 1215 hours: Pupils contracted and no response to sensory stimuli could be obtained.

"1400 hours: No change.

"1530 hours: No papilloedema; slight divergent squint noted right. Corneal reflexes present and equal; right arm flaccid, no reflexes present, though grasp reflex elicited. Left arm reflexes and tone normal. Passive movement of the left leg free and associated with crossed extension of the right leg. Tendon reflexes present in both legs—right less than left, plantars both upgoing (no hamstring contraction on the right)."

The man's condition deteriorated; at 1900 hours his respiration rate was 8/min, and so we gave him light premedication, pethidine 100 g intravenously. Without difficulty the leading medical assistant gave nitrous oxide and oxygen, and I used local lignocaine liberally.

"Burr hole made over the left mid-temporal area, using hand burr 3/4" diameter. Dura exposed and slit. About 20 ml bloodstained cerebrospinal fluid aspirated."

This was part of the description that I offered to the British Military Hospital, but my personal journal affords a more frank statement:

"The patient kept station with survival until 1900 hours. When I got back from dinner he was breathing 8/min and Cheyne-Stokesing. Death seemed imminent. I said to the leading medical assistant, 'We'd better make a burr hole and see if we can find some blood.' All was ready and the experience seemed less traumatising than had been the setting up of the drip earlier (our Russian colleague had used up every vein there was).

"I kept saying to Sam (leading medical assistant), who gave a very good anaesthetic: 'What the hell am I doing this for? I've never done it before in my life.' After a lot of boring and sweating I delivered what seemed to be a complete disc of temporal bone. Everything bled, the dura was visible... incised... little or no blood. But things picked up miraculously..."

Later his chest bandaging, which was obviously restricting his breathing, was cut and he coughed up several ounces of putrid sputum, inspissated blood it seemed.

"3 February. When I was feeling devoid of hope at 0200 hours, a strange thing happened. JS, a third officer from South Africa, came sheepishly to the hospital door. (And this was not in character, being a very colourful person.) 'Do you happen to know Boris's religion?' he asked. Looking at his

passport without comprehension, I remarked that religion was something that officialdom did not recognise in Russia. JS wondered if the patient might be a Russian Orthodox and, if so, whether he might have a word with him. Laconically I replied that speech or any communication could not be reciprocated. 'Why do you ask? Are you Catholic?' 'Yes,' he said. 'Then by all means speak to him even if he doesn't comprehend.' JS then asked for a glass of water and disappeared on his own to the patient. He was there only a moment. ... Last rites?"

But Boris, as we all called him, survived and was flown off next morning.

"So off he went. I was weeping as I left the flight deck, partly from relief, but also because of the strangeness of the contact with this small, aesthetic figure. ... He never communicated more than his pain to me and I never knew more than his name. Eugeniy Palamar, born 9 January 1958. The political barrier between us had been neutralised by the more powerful 'brotherhood of the sea' (the captain's quote, not mine)."

Periodically, as our tour of duty changed imperceptibly into a return trip, we had word by signal that Boris gradually improved and was repatriated by air, conscious but with a right hemiplegia.

Where expediency became necessity

I know that in no circumstances would I have dared to have such surgical adventures within reach of the shores of Great Britain. I would not have dared because my ethical status would have been insecure, and the risks alternative to my anatomical gardening would have seemed trivial. Isolation had translated expediency into necessity. The mother of invention demanded that I put together enough for the patients' survival. The difficult bit was not killing them in the process. For that all credit must go to those teachers of anatomy and surgery who struggled against all the odds to get me through the examinations 40 years ago. The late Professor H A Harris, I used to think in those days, put too much emphasis on the importance of the inguinal canal; I had no idea that it was to be my Waterloo. Once I had won there I could tackle anything, so it is as well that I have hung up my tarpaulin jacket, though I miss some excellent shipmates.

Dose them with water

LUIGI PIRANDELLO

Translated by Elsa Ansley

Do you remember Milocca, blissful little town, so well guarded by its sage administrators that there isn't the slightest danger civilisation might one day reach it? They foresee, with the continuing progress of science, new and ever greater discoveries; and in the meantime they keep Milocca with no running water, no electricity, and no made up roads. Do you remember it?

Well, I want to tell you the latest piece of news from that blissful place, even at the risk of your finding it quite unbelievable. But, otherwise, how can you build up your idea of what is real?

Well then, I have gathered that a certain Calajò is the local general practitioner in Milocca. This doctor seems to enjoy quite a reputation in medical circles (outside the town of course) for his contribution, as they say, to the study of I know not what disease, at present unfortunately still incurable.

But what is the purpose of medical science? To be applied, of course, or so thinks the innocent Dr Calajò. And so, using much discretion and depending on the circumstances, he puts his science into practice, which is, after all, his duty. This is enough to make

him disliked by everyone in the town: disliked on principle, quite independently of the outcome of his medications.

To be consistent, the people of Milocca should never summon Dr Calajò to their dear ones' sick beds. In fact, I have evidence that they don't, until the very last moment—that is, when they stop being Milocca folk and become just poor devils terrified of death approaching. Usually, for minor ailments (or what to begin with they consider minor) they use the services of a certain Piccaglione, who, assisted by a sleep walker with whom he lives, employs some *sui generis* techniques in treating the sick.

You see, Piccaglione is just the kind of doctor needed in Milocca: he is not qualified; makes no claim to be a scientist; does not have any dealings at all with science, but remains outside it by choice, aided only by that ridiculous somnambulist woman. There is a not inconsiderable advantage in using his services: one doesn't have to go to the chemist, since Piccaglione carries his whole medicine cabinet in his pocket. This is in a box which opens like a book, revealing on either side a number of compartments, each holding a