



A doctor in the Great War —an interview with Sir Geoffrey Marshall

BARBARA EVANS

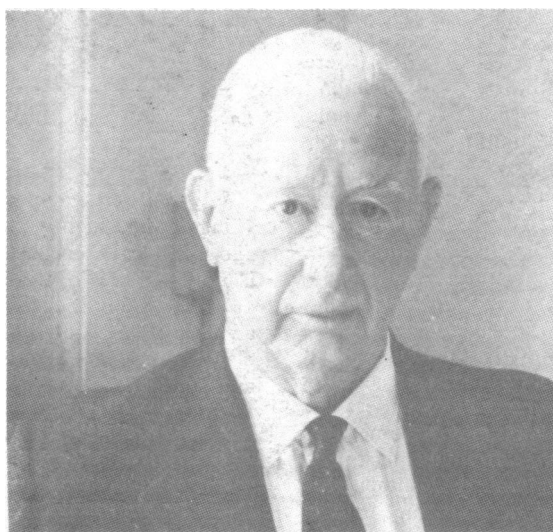
At his death on 9 August this year Sir Geoffrey Marshall was the oldest surviving physician at Guy's Hospital, where he qualified in 1911. He was born in 1887 on 23 April, St George's Day. Not that he cared much for St George, who, as he told me on his 89th birthday, was, according to Gibbon, a corrupt butcher who supplied poor-quality meat to the Roman Army and with the profits bought the Bishopric of Capadocia. He added, "I hope there's a moral in all this."

Geoffrey Marshall owed some at least of his longevity to his clinical acumen, courage, and persistence. When he was 74 he developed a cough and heard a hissing suction sound in his own chest on inspiration. Despite negative findings on chest radiographs, bronchogram, and bronchoscopy, he persuaded Sir Clement Price Thomas to explore his chest. Price Thomas found a carcinoma in the left lower lobe and obeyed his patient's instruction to "take out anything you don't like the look of."

In 1914 Geoffrey Marshall was a demonstrator at Guy's in Professor M S Pembrey's department of physiology, a recognised training ground for young physicians. As a respiratory physiologist Geoffrey invented gas and oxygen anaesthesia and devised his own machine while serving as an anaesthetist in the Royal Army Medical Corps in the first world war. He was given an OBE and twice mentioned in dispatches, but he never published this work as he feared that he would be regarded as an anaesthetist rather than a physician. After the war he returned to Guy's to found the hospital's tuberculosis department, developing his own pneumothorax apparatus. In 1920 he became physician to Guy's.

I was his first house physician at the Brompton Hospital when he was appointed to the staff in 1935. I had just had a skiing

holiday and thought I looked rather healthy, but as we walked up to the wards Geoffrey turned to me with his charming crooked smile and said: "We look like two autumn leaves drifting along together." We both had red hair in those days. The first innovation the new physician made was to sweep away the rule that only consultants could ask for a radiograph. Until then both the house physician and the honorary had first each to mark the physical signs on printed diagrams in the notes. Geoffrey reckoned that as every patient was going to need a chest x-ray film it should be done right away.



He was a great clinician and continued to work as a successful consultant until he was well over 80. In 1951 his work as principal referee to the Civil Service Commission earned him his CBE, and that year he was knighted for his services to George VI. He eventually moved from St John's Wood to Hampstead, where in his garden he could hear nightingales and watch the tree creepers. He once told me he could no more have a garden without weeds than live in a house without dust.

The great sorrow of his life was the death in 1941 in a military hospital in Cairo of his only son. David had wound diphtheria and had been ordered to stay in bed, but it was Christmas Day and an orderly allowed him to take round the tea to more severely wounded patients with better myocardia.

I recorded this conversation with Sir Geoffrey Marshall on 7 June 1966. It was one of many we had at that time when we were near-neighbours. I was going abroad for a year and feared, unnecessarily as it turned out, that I might not see my old friend, who was nearly 80, again or hear once more his gentle melodious voice throwing away pearls of humour and wisdom.

No 2 Ambulance Flotilla

DR BARBARA EVANS: Tell me about your barge.

SIR GEOFFREY MARSHALL: I joined up in August 1914 and in September we went over to France, expecting to go to Calais, but the Germans were advancing and we thought we were losing the Channel ports, so we were switched to Le Havre. We put up tents on a hill above the town, and we did not get any wounded at all because the Channel ports did not fall. So then I went to a station hospital in Boulogne, where the officer commanding the hospital was a regular RAMC surgeon. I had been studying anaesthetics and I gave intravenous alcohol or intravenous ether so as to keep well away from his end. And then Percy Sergeant came and did his head cases there, and he thought this was wonderful because I was not anywhere near the field of operation.

I got terribly fed up with being stuck at the base and I kept on volunteering to go up to the front, but my chief, who liked my anaesthetics, always crossed my name off the list. Then on my birthday in 1915 I got German measles, for which I thanked God, and I was evacuated; and then I had a chance to get away from this place.

So I rushed up to the office of the assistant director of medical services in Boulogne and said "Please send me up to the front," and he said, "Well, I promised faithfully to send you back to your hospital. Colonel Butler wants you there. But if you don't see him you can take the next job, which, I am afraid, is on a barge." So I rushed out of his office with a chit and met Colonel Butler immediately outside and ran like a hare, got into a train, and went up to a place called Béthune, where I was given command of a barge—No 2 Ambulance Flotilla.

We had a most enchanting time—a huge French barge fitted up as a ward with 20 beds, two nursing sisters, four orderlies, a crew of Norfolk Broadmen, and a Belgian tug with a skipper and his son and his daughter, who used to sit in the stern and play a ukulele. We used to be tugged up the canals until we got somewhere near to the line, then we would lie up and wait for a battle, and in due course we would get filled up with wounded who were too ill to go by road or rail. We would be desperately busy for about two days and two nights being tugged back to the base at Le Havre.

We had all sorts of adventures by the way. Where we used to lie up the canal was used a good deal by the troops for bathing—they would come out of the line and get a wash that way. They very often got drowned because the bottom was muddy and some of them were not very good swimmers. I had a great deal of practice in reviving the apparently drowned. The physiologists often say that if you don't get a man breathing within five or six minutes, it is no good going on. That wasn't at all my experience. Sometimes they wouldn't start breathing on their own for what seemed a good deal more than half an hour. At any rate one was completely exhausted by the time they started breathing.



Interior of an ambulance barge. Imperial War Museum.

EVANS: And were they all right?

MARSHALL: They were young fit men; they were apparently all right. Of course, we sent them down the line. I did not see them again. But they walked and they talked and so forth. They were not blind. We revived quite a lot.

In the slack times while we were waiting we had an enchanting time in this lovely great barge in a place where there was not much civilisation and not many doctors. All sorts of people would see one's barge with its great white flag with the red cross, and they would come and call and I would borrow a horse and ride all round the neighbourhood, or I would borrow a motor-bicycle, about which I knew nothing—I was a menace on the road.

Then perhaps somebody would come along and say: "I wish you would come along, Doc, and look after some of my men," and you would find yourself invited to a bombing school just down the line. You would go into a great big barn filled with straw, and would see all sorts of men lying about with blood-stained wounds and they would say: "Look here, Doc, do you mind mending these chaps? We cannot report them because they weren't supposed to be fighting but there was a lot of noise the other night and we knew there was a battle on, so we thought we ought to join in. It's very awkward having these wounded because we cannot possibly let them go through the ordinary channels or we shall get dismissed our jobs." It was just like seeing the hounds on a day after a hunt all lying in the straw with their scratches. And one became a very popular character. They used to say, "Come for a drink any time the barge fetches up," and they used to pay great honour to you.

A perfectly nice job

But the barges really did good work. They were beautifully equipped, perfectly smooth as travel, and we had two very good nurses of Queen Alexandra's Imperial Military Nursing Service. We had, of course, mostly head wounds and chest wounds.

EVANS: And just you?

MARSHALL: What do you mean, "just me?" I was the Doc. We had with us a sergeant and two corporals. Very elaborately ornamented French officers used to come and call because one of the sisters looked very good in the distance—she used to sit up on the deck when we were travelling and knit, and their eyes used to be attracted. That was when we had not got any wounded, of course, which was quite often.

Half our time we were empty, so that when we pulled up they would come and call. I remember a very stylish French general with his staff. These barges used to tie up to each other; there would be perhaps three or four lines of them from the bank. You would just tie up wherever you could. So a chap like that would have to come over several barges to get on to our barge and the decks were rather slippery, rather polished. And I remember this old gentleman, who was very gallant, was very impressed with the nurses, and he was delighted that he was given something to drink. Then he and his glittering staff all left and he turned round and saluted this nice-looking lady and went smack on his face on the deck. He was picked up but was rather shaken. Then he got on the next barge and the next—and he slipped on every barge and went flat down, and I ordered everyone down below so that he shouldn't be embarrassed.

EVANS: Did he come again?

MARSHALL: Never.

EVANS: And were you the only barge?

MARSHALL: No, there were four barges in this flotilla. I never saw any of the other flotillas. They must have been on a different system of canals altogether.

EVANS: But doing medical ambulance work?

MARSHALL: Yes.

EVANS: Did you never know the other doctors?

MARSHALL: Oh yes. I have never met any of them since.

EVANS: Did you have deaths among these cases?

MARSHALL: Oh yes, plenty.



A hospital barge at Vaux-sur-Somme, August 1916. Imperial War Museum.

EVANS: Did you bury them?

MARSHALL: No, we took them to base. It was a war in which you did not think an awful lot about fatalities. I remember a poor sentry at the docks who gave us a salute on a wet dark night, and he slipped and was never seen again—alive anyhow. It was muddy water—you could not find people in it.

That was a lovely job. I thoroughly enjoyed it. In the slack times I read the whole of Gibbon's *Decline and Fall*; and, incidentally, we often used to have nice visitors—for instance, Sir John Rose Bradford and T R Elliott came for a voyage on my barge. They wanted to see all these chest wounds. What made me think of it was mentioning *Decline and Fall* because Sir John Rose Bradford wanted to have a rest when we got to our destination and Elliott wanted to go for a walk and see the trenches, so Sir John asked me for a book. I gave him the first volume of *Decline and Fall*. I thought he would be delighted, and he was absolutely furious. "All right, Marshall," he said, "I'll get level with you for this." He wanted a detective story.

EVANS: Didn't you have any of those?

MARSHALL: I don't suppose so. I was rather highbrow at that age, you see. I never have liked detective stories, except Sherlock Holmes.

Anaesthesia in the front line

EVANS: How long were you on the barge?

MARSHALL: I suppose for about six months and was thoroughly dug in and knew everybody and all the places we went to. Then a dreadful old man, who was the senior consultant, Sir Anthony Bowlby, drove up to my barge one day—lovely day—and said, "Marshall, we are having an awful lot of deaths in the forward hospitals from shock, and you did a lot of work on the physiology of anaesthesia before the war so I want you to come along and see if you can do anything about these chaps." And so he hooked me off my perfectly nice job on the barge and sent me to a clearing station in the Ypres Salient, which wasn't nearly so peaceful.

EVANS: But very useful?

MARSHALL: It was useful because surgical shock was a tremendous menace in that war. Men were hit and lay out and got cold and damp. They often could not be picked up for a good many hours, and if they had shattered limbs that had to be amputated the mortality was appalling. The death rate was something like 90% for amputations above the lower third of the thigh. There were a lot of such amputations.

EVANS: Did you not have the means for treating shock?

MARSHALL: Oh yes, we did. But it wasn't very successful. We were using ether mainly as an anaesthetic in those days and I did a lot of blood concentrations on these people. The blood was

usually very concentrated in shock, and if you gave a chap ether or chloroform, or a mixture of the two, the blood got progressively more and more concentrated, the blood pressure fell, and they died. So we had to give up using ether and chloroform and we tried spinals, but they lowered the blood pressure—the systolic pressure used to go down until it was unregistrable. That seemed also to encourage gas gangrene, a very common cause of death in those days.

EVANS: But you reduced the mortality, didn't you?

MARSHALL: Yes—not very much by spinals, but we did by gas and oxygen. In those days we had no apparatus for continuous gas and oxygen. We had only ordinary dental machines. And so I started playing around and making gimcrack machines for giving continuous gas and oxygen by inhalation. Intravenous ether and intravenous alcohol were no good for shock. It just seemed to drown the patients. So I used to give continuous gas and had a tube delivering oxygen in a mask I made myself, and judged by the colour. They did very well. Finally, I made a machine which Coxeter developed for me. I came home on leave and showed them a drawing of what I wanted, which I had had made by the tinsmith out there. So Coxeter made it and then said: "For goodness sake publish this because some chap has borrowed our blocks." However, the other gentleman did publish it and it was Dr Boyle, and that was the origin of Boyle's apparatus, which he modified afterwards. Well he thought it was all right, and I didn't mind because I wasn't going to be an anaesthetist anyhow. But with gas-oxygen we cut down the mortality from about 90% to something like 25%.

Of course, we did a great deal of blood transfusion. We knew only about four blood groups and we believed that one group was a universal recipient and another group was a universal donor, so we used to keep all the lightly wounded and see if they were universal donors, and all universal donors had to stay indefinitely in the casualty clearing station to supply the others.

EVANS: How long did you stay there?

MARSHALL: About three years at Poperinghe in the Ypres Salient.

EVANS: Doing anaesthetics?

MARSHALL: Yes, and the physiology of shock and a certain amount of ordinary medicine, but mostly anaesthetics.

EVANS: Anaesthetics are quite different now?

MARSHALL: Yes, because it is a very much advanced science and it has enormously improved. One of the great advances of medicine is the understanding of how to keep a patient fit and properly oxygenated under anaesthesia. In the old days we used to want the surgeons to hurry because the patient's condition gradually deteriorated, but now you take a patient into the theatre in a very bad state indeed and by the end of the operation he is in a much better shape than he was before he started. They



"Stretcher bearer rescuing man who has been buried alive." Painting by Austin Osbert Spare. Imperial War Museum.

do not have to breathe for themselves, they do not have to do anything for themselves.

EVANS: But you learnt this, didn't you, ahead of your time by using intravenous anaesthesia all those years before anyone else thought of it?

MARSHALL: There were other people doing it too, you know. There was a fellow called Christie who did a tremendous lot. Rood from University College was doing it and I copied him.

EVANS: You took it to France with you, you mean?

MARSHALL: Yes, when I was sent to France they were not at all happy about their anaesthetics, particularly for head wounds, so I tried these things out there.

EVANS: You must have been in a minority when you were an anaesthetist.

MARSHALL: Oh yes, that is quite true. There had been very little attempt made really to get at the basic factors which enabled a patient to be kept insensible without deterioration of his general condition.

EVANS: Did the war give you experience of this?

MARSHALL: Oh yes. There is no doubt of that. That is one of the very few compensations of war. It enormously increases the rate of medical and surgical research.

EVANS: And knowledge?

MARSHALL: Yes, enormously. Penicillin would not have been turned up nearly so soon but for the last war. It had been lying latent eight years before Chain and Florey took it up and worked it out, and they did this because of all the septic wounds. They said so.

EVANS: And what do you think was developed in the first world war by the stimulus of war?

MARSHALL: One thing, of course, was antityphoid inoculation—TAB. Almroth Wright had started on it but he never got it really going before the 1914 war; it was the first war in which deaths from the typhoid group of diseases were much less than deaths from wounds—indefinitely less—and that was entirely due to Wright's immunisation campaign. Before that enteric killed far more people than wounds did.

Gassed

EVANS: Can we talk about the treatment of gas casualties?

MARSHALL: My first experience of gas—it was drift gas—was in June 1916 while I was in the clearing station near Poperinghe in the Ypres Salient. They first loosed off this gas on a beautiful bright warm sunny day. We were about five miles behind the lines. There was a curious smell, which was quite noticeable—we all remarked on it—and then after a time the casualties started coming in. It was most dramatic: long, long lines of Canadian soldiers, single-file, each man with his hand on the shoulder of the man in front. There would be a man in front who could see—all these other chaps couldn't; hundreds and hundreds and hundreds of these chaps stumbling along, single file.

EVANS: Frightened?

MARSHALL: No, blinded.

EVANS: I know, but frightened too?

MARSHALL: Well, they were depressed naturally because nobody knew anything about it, and there were far too many to take into huts or tents. We just laid them out in the fields, in great long lines. We had plenty of oxygen, plenty of rubber tubing. It was rather like an irrigation system. We had tubes running between the files of men, their heads towards the main tubes, head to head in two lines. We had any number of glass connections and finer tubing, and we stuffed a fine tube up the nose of every man and kept the oxygen running with cylinders every so many feet apart so as to keep up a good pressure.

EVANS: Did you organise this?

MARSHALL: Yes, I was the physiologist. I had been a demonstrator in physiology at Guy's. Their eyelids were terribly swollen, but if you pulled them apart the men could see, and so I sent other men up and down the lines shouting out to them that

they had not been blinded—a most remarkable effect it had.

EVANS: Yes, but could they open their eyes?

MARSHALL: No, not for days. They were very inflamed.

EVANS: What gas was this?

MARSHALL: Chlorine.

EVANS: So that they were really running with tears.

MARSHALL: Oh yes. There was froth coming out through their nostrils and their mouths. Their lungs were all bubbly.

EVANS: And how long did you keep them laid out with oxygen?

MARSHALL: Only for about eight hours, and then they were sent down the line.

EVANS: By train?

MARSHALL: Most of them. Ambulance trains used to come right into the clearing station.

The end of the war

Things got tough towards the end of the war and we were sent down in teams to the Somme, where the 5th Army was, which was the least efficiently led of all the armies. I think we had been there only about 36 hours when we were awakened by an impassioned oration from the colonel of the clearing station, saying that the local aerodrome was in flames. That was a signal for us to evacuate and we were to find our own way to the base. We had a lovely time. I had been stuck in a muddy field for something like three years up at Ypres, and here we were down the Somme, beautiful country, and we drew lots as to who was to stay behind and look after the wounded we could not evacuate. I wasn't the chap who drew the lot—one of my friends was.

EVANS: What happened to him?

MARSHALL: I gave him my maps and my compass and told him I would meet him again after the end of the war. He was a good Guy's man and a very good cricketer. We helped him drag all the wounded on stretchers down to the side of the road, and we stuck the wounded on to every wheeled thing and every horse that came along. He was getting rid of them very well when we left. We each took our own team. I had three orderlies, a surgeon, and a couple of nurses. Sure enough this chap got rid of all the wounded, which was quite remarkable. We met him at the base 10 days later. This was March 1918.

EVANS: Did you get home at all in the war?

MARSHALL: Yes, I got home quite early in the war—I should think it must have been 1915. I got four days' leave, which was very nice. I didn't get married until the very end of the war. In fact the Armistice came during my honeymoon, which was most exciting.

EVANS: So you never went back?

MARSHALL: Oh yes, I had another six months or more looking after the sick. We had that ghastly flu epidemic, which killed more people than all the battles of the war. I was in Belgium near a place called Turcoing in what had been a tuberculosis sanatorium. It was bitter weather. A lot of our chaps were coming out of prison camps in Germany and finding their own way back through our lines. They were emaciated and badly clad and tramping through the snow, and, of course, the flu bowled them over right, left, and centre and an awful lot of them died. It was a terrible illness.

EVANS: Did you get it?

MARSHALL: I got it in the end. But I got desperate—they died like flies these chaps, with a curious lilac-coloured cyanosis. Finally, I nursed them out of doors.

EVANS: On the ground?

MARSHALL: No, in beds, out in the snow, and I got something like 60% recovery instead of only 20%.

The painting at the head of the article is "Gassed" by John Sargent. Imperial War Museum.

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