

Who deserved the credit for the discovery of penicillin? – Source Sheet for Paper 2 Exam Questions

Penicillin came into use during the years 1942-45. To most people, it was a wonder drug that cured illnesses that earlier would have led to certain death. From this time until his death in 1955, Alexander Fleming got most of the credit for penicillin. He became a national hero in Britain and was honoured all over the world. In 1945, he was awarded the Nobel Prize for medicine. However, he had to share it with Ernst Chain and Howard Florey, who had helped developed the drug with Fleming. Was this fair? Who should really get the credit?

Source A – A cartoon about Fleming's discovery of penicillin.



Source B – From a biography of Fleming published in 1959.

Fleming was in his little laboratory as usual, surrounded by dishes. He disliked being separated from his cultures before he was quite certain that there was no longer anything to be learned from them. He was often teased about his untidy habits. He was now to prove that untidiness may have its uses.

Fleming took up several old cultures and removed the lids. Several of the cultures had been contaminated with mould. "As soon as you uncover a culture dish", he said to Pryce, "sometime tiresome is sure to happen. Things fall out of the air". Suddenly he stopped. Then after a moment's observation, said "That's funny..." on the culture dish at which he was looking, there was a growth of mould, as on several others, but on this particular one the mould, the staphylococci germs had been dissolved.

Fleming took a little piece of the mould with him in a label. He obviously was not sure that this mysterious mould would be preserved. "I'll look me", Pryce said. "I didn't confine myself to observing, but took action at once".

Source C – From a book about Fleming published in 1984.

There was a centuries old 'folk-medicine' tradition that various moulding substances cured infections.

Details of one early use of penicillin were recorded in 1928 when a former patient of Joseph Lister, the treatment of the wound she had received, when she was a young girl. Injured in a street accident, she had been told that she became infected with septicemia. The antibiotics failed to clear the infection. When something was used that worked dramatically that she asked that the name to be written in her book. The name was written in her book.

Source D – A recent description of Fleming's early work on penicillin.

Fleming used penicillin as a local antiseptic. The first patient he had cured of a staphylococcal infection cleared up, but he used it only as a local antiseptic and did not have the time to produce enough penicillin to test on other patients.

Fleming was not a chemist. Nobody at the time took any notice. This was probably because he had only used it as a local antiseptic. This meant he had not realised the importance of the breakthrough. He did write at the time "It is quite certain that penicillin will be of great importance in the treatment of septic wounds".

Source E – From a letter written by Howard Florey on 6 September 1939 to the Medical Research Council in London.

It is proposed to prepare it in purified form suitable for injection and to study its toxic effects on living creatures.

Source F – Professor C M Fletcher, a member of Florey's team, interview on TV in 1967, recalling the first human trial of penicillin in February 1941.

The patient, a policeman, had had a sore on his mouth for about a month, and the infection had spread to his scalp. The infection had spread to both his eyes and one had been removed. He had an abscess on his lung – and was well on the way to death. We'd nothing to lose and everything to gain. So we thought we'd try penicillin.

The shortage of penicillin was such that after the first day I collected his urine and took it over to where Florey was working. The penicillin was extracted from the urine and used again.

On the fourth day, the patient dramatically improved. He was sitting up in bed and his temperature had gone down. On the fifth day, the penicillin began to run out and we couldn't go on. The patient gradually worsened and eventually died.

Source G – From a letter from Florey's boss, Professor Mellanby, to Florey, April 1941. In the meeting on the Friday, Florey had suggested to Mellanby that he should go to the USA to produce penicillin.

After discussing the matter with you last Friday, I have come to the conclusion that the only way in which your most important work on penicillin can be made to go forward is for you to go to the USA for three months. It is quite clear to me also that you cannot get penicillin produced by manufacturing firms in this country under present conditions.

Source H – A stained glass window showing Fleming working in his laboratory. It is in St James' Church, Paddington, close to St Mary's Hospital where Fleming worked.

