

From Blood Circulation to Antibiotics

British Aid to advance of World Medicine

By

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Some of the greatest discoveries in medicine have been made in Britain. First comes that of the circulation of the blood by William Harvey, who took his degree in medicine at Cambridge University, England, in 1597.

By study abroad and by experiment and dissection in England, Harvey had by 1615 satisfied himself of the fact of the circulation of the blood. But when he published his discovery, one of the first results was a decrease in his practice, because people thought he must be mad.

Another pioneer in England was John Hunter, who built up the Hunterian Museum of human anatomy which is housed in the building of the Royal College of Surgeons in London, and was so complete that it was described as a wonder and inspiration to the whole anatomical world. A large part was destroyed in the air raids on London in the second World War, but much remains.

A great medical discoverer of the 18th century was Edward Jenner, who proved the fact of the protection given by vaccination with cow-pox against smallpox. This was so revolutionary that the Royal Society did not accept Jenner's paper for publication. But it was the foundation of the theory of immunity, and led to the work of Pasteur, Lister and Koch, and opened up a new chapter in British and world medicine.

In another field, Sir Charles Bell, in his book "Idea of a new anatomy of the Brain," published in 1811, made plain the difference between motor and sensory nerves, previously un-

known, and their relation to the functioning of the brain.

In tropical diseases, a great step was taken in the 'seventies of the last century when Sir Patrick Manson discovered that the amoeba of malaria was conveyed to man by the bite of the mosquito. This meant that malaria could be conquered (1) by protecting man against the bites by mosquito-proof curtains, and (2) by treatment with quinine and other drugs. This discovery of Manson's opened up the possibilities of safe living in vast areas of the world's surface in Africa, in Asia, in the Americas, and all other parts of the world where malaria is present.

Nursing and Surgery.

But some of Britain's greatest contributions to world medicine have been in the organisation of medical knowledge in special fields of activity. An outstanding example of this is in the work of Miss Florence Nightingale, a pioneer in the organisation of nursing services. Her opportunity came with the war in the Crimea in 1854 and the breakdown of the medical services in the Army, which at that time did not include any nurses.

Florence Nightingale was asked by the Secretary for War to go to the Crimea and organise nursing services, and she left at once with 38 nurses whom she had previously selected. This revolutionised the situation. "Before she came," said a soldier, "there was cursing and swearing, but afterwards the place was as holy as a church."

A great leader in the world of

surgery was Lord Lister. While doing a house surgeon's duties at University College Hospital, London, he discovered that hospital gangrene, then a terrible scourge in hospitals after operations, was caused by a germ. He saw germs in the slough of wounds under the microscope and showed that they were the cause of the disease. To cure this condition, Lister said that antiseptics must be used so as to render impossible the existence of any living septic organism in the wounds. This preventive treatment, which he published in the medical press in 1867, was successful, and the history of medicine and surgery will always be divided into two periods: (1) before and (2) after Lister.

Discovery of Penicillin.

But it has remained for recent years to make one of the greatest advances which medicine has made at any time—the discovery of penicillin and other substances which destroy disease-producing micro-organisms and which are called antibiotics. The discovery of penicillin was made in 1928, and is often said to have been the result of an accident. For the culture plate of staphylococci on which penicillin was found growing had been left on a table in the laboratory of Professor Fleming and some of the staphylococci had been killed.

But what is accident? Had the late Sir Alexander Fleming not investigated the nature of this mould penicillin and the killing of the staphylococci, no discovery would have been made. This was no accident, but the result of the discipline of the scientific mind. But the discovery received very little attention at the time from scientists, who had very little faith in its practical value.

Needed in War.

The discovery would have been forgotten, for Fleming had not been able to interest the scientific world, and his attempt to do so at a meeting

of bacteriologists resulted only in the loss of his report in a mass of papers. But the war broke out—the second World War. That made a great change in mentality. For everything to help reduce the death-rate from the infection of wounds and the high disability rate from the effect of sepsis on recovery from wounds there was at once a very high priority demand. And because of this, penicillin was looked at again by the authorities of Government and came into its own.

Dr. Florey was professor of Pathology at Oxford, and the need for powerful anti-bacterial substances for war use was discussed in his laboratory, and the question of the value of penicillin was taken up again. This re-discovery of penicillin confirmed the earlier conclusions arrived at by Fleming. And, in practice, the value of penicillin became clear and was accepted as of first-class importance.

The antibiotics, penicillin and others, which have since been developed in other countries, including aureomycin, streptomycin and chloromycetin have opened a new field for treatment of disease, because they destroy the micro-organisms causing it.

This stage in the development of the study and use of antibiotics is not an end in itself; indeed, it is the opening up of new ways of treatment to help mankind. It may be possible, in the near future, to make life in the tropical areas of the world more free from disease and healthier than ever before. Research continues, and medical men and women are carrying out the work in many countries. We are now at the beginning of a new age of medical discovery and of medical treatment, and, very important, of the prevention of disease. This is a great contribution from Britain to world medicine.

[By Courtesy—British Information Services]