

Centenaries in March 1936.

Foster Michael, 1836-1907.

EIGHTH of March 1836, saw the birth at Huntingdon of one to whom Thomas Henry Huxley wrote in 1891 "You are physiologically omniscient." At School and at College Michael Foster distinguished himself in Classics. But coming of a Non-conformist family, he could not get admission into Cambridge for further pursuit of Classics. Hence, he entered the medical side of the University College of London in 1854. Having obtained the M.D. Degree in 1859 and after a year's further work in Paris, he commenced practice with his father at Huntingdon. For six years he remained in practice. But his real longing was for a scientific career. Hence, he gave up practice in 1867 and began to assist his old Professor at the University College in teaching practical physiology. He soon got a reputation as a successful teacher and two years later he succeeded Huxley as Fullerian Professor of Physiology at the Royal Institution.

HIS OPPORTUNITY.

When the University of Cambridge sought the help of Huxley to organise separate teaching in Physiology, he wrote "I know the very man for you, a young fellow at the University College called Foster." This brought the right man to the right place in 1870. Having continued as Trinity Praelector of Physiology for several years, he was elected the first Professor of Physiology of the University in 1883. He continued as Professor till 1903, when he resigned his post. During this period, he created the Biological School of Cambridge. From the first he insisted on practical work and had the biological laboratory built in 1878.

HIS SERVICES TO PHYSIOLOGY.

Before Foster's days, the science of Physiology was scarcely recognised. But Foster's teaching was a revelation; it was all new, not to be found in any English text-book, all so suggestive, opening out vistas of research, showing how little was known, and how much remained to be found out. His enthusiasm and sympathy caused many of the small band of his earliest students to take up a scientific career. He had a marvellous gift to sense the most appropriate field of research for each of his students. For example, when F. M. Balfour was uncertain what line of research to follow, Foster took up an egg, cracked it, showed him the embryo inside

and said, "What do you think of working at that?" It is a matter of history how much the science of embryology benefited by this stimulation. The two huge tomes of *Comparative Embryology* of Balfour should have fertilised at that moment. Langley, Gaskell, Sherrington, Sedgewick, Hopkins and Martin are some of the other well-known scientists who were thus shaped by him. In about fifteen years, his influence succeeded in obtaining University recognition for physiology as one on a par with the older studies of the place.

The foundation of the Physiological Society in 1875 was mainly due to him. The *Journal of Physiology*, which started its career in 1878, was another result of his unbounded enthusiasm for his subject. So also it was chiefly through him that the International Congress of Physiologists came into existence in 1889. His popularity was so great that he was elected perpetual Honorary President of the Congress in 1901, with prolonged outburst of applause that seemed as though it would never stop.

But perhaps his most widely known physiological gift was his famous *Text-book* which was published in 1876. It went through eight editions. It was the text-book throughout the English speaking world and it was translated into Italian, German and Russian.

HIS SERVICES TO SCIENCE IN GENERAL.

As Secretary of the Royal Society from 1881 to 1903, he set himself to aid Scientific progress in every direction. He took an active part in the establishment of the National Physical Laboratory, in the reorganisation of the Meteorological Office and in the founding of the International Congress of Geodesy. He succeeded in making the Royal Society an expert adviser to a number of Government Departments and a living factor in the life of the nation. He also threw himself heart and soul in the starting of the *International Catalogue of Scientific Papers*. He was a champion of science in the House of Commons, in which he represented the University of London from 1900 to 1906. He served also in several Parliamentary Commissions and was President of the British Association in 1899.

HIS PERSONALITY.

According to *Nature*, no description can do justice to Foster's personal charm. His strongest point was force of character,

energy, perseverance and thoroughness. Foster's actual additions to knowledge by way of research are small. But he was a discoverer of men rather than of theories. His powers of organisation were remarkable. Huxley's estimate of his powers can be inferred from a letter he wrote to Professor Weldon on February 9, 1893, in reply to Weldon's plea that what was possible in the Cambridge Biological School should not be difficult to be achieved in London. He wrote 'Michael Fosters do not grow on every bush.'

Foster was a delightful companion. He was excellent as an after-dinner speaker and was usually expected to speak; on the very day on which he died, January 28, 1907, he had made an excellent speech at the meeting of the British Science Guild.

S. R. RANGANATHAN.

Russell (Henry Chamberlaine) 1836-1907.

RUSSELL, the pioneer Meteorologist of Australia, was born at West Maitland, New South Wales, on 17th March 1836, that is, within nine days of the birth of the pioneer physiologist of the British Empire. After graduating at Sydney University in 1858, he became assistant to Mr. Scott, the Government Astronomer and succeeded him in 1870. He held the post for thirty-five years.

HIS CONTRIBUTIONS TO ASTRONOMY.

Apart from reorganising and refurbishing his observatory, he led the Australian observation of the transit of Venus in 1874. He also interested himself in the measurement of Double Stars from 1882 to 1889. Volumes 42 and 55 of the *Monthly Notices* contain his account of the "Transits of Mercury in 1881 and 1894".

HIS CONTRIBUTIONS TO METEOROLOGY.

The chief contribution of Russell was to the Meteorology of Australia. In 1870 there were only 12 meteorological stations in New South Wales and Government could not afford any large outlay towards an increase. But, by his persuasion and influence, Russell induced the farmers to make observations and supplied them with the necessary apparatus made by himself. The result was that, when he resigned his post in 1903, there were 1800 stations, of which over 1500 were voluntary.

By 1878, he began to get a sufficient number of returns from the observation stations, and he commenced the publication of weather map in the papers. He also succeeded in establishing a system of weather forecast. It is said that 82 per cent. of his forecasts were found to be correct.

As an inventor, there are 23 meteorological instruments to his credit. He contributed 130 papers to various learned periodicals.

HIS GENERAL SERVICES.

Mr. Russell took a very active part in initiating technical education in Australia and was a member of the Board of Technical Education. In 1891 he was made Vice-Chancellor of the University of Sydney. He was for several years President of the Royal Society of New South Wales. He was the first New South Wales man to be elected an F. R. S. This was in 1886; while he became a Fellow of the Royal Astronomical Society in 1871.

After a severe illness in 1903, when he retired from service, his health continued to be indifferent, until he died on February 22, 1907.

S. R. RANGANATHAN.

The Total Solar Eclipse of June 19, 1936.

THE Governments of Soviet Russia and Japan have invited the various scientific organisations of the world to send expeditions to their territories for observation of the eclipse. Since the eclipse of February 1934, this is the first total solar eclipse to be visible on the earth. According to the *Christian Science Monitor* (January 2, 1936) the eclipse will begin to be visible at sunrise in the Mediterranean Sea off the south-western coast of the Grecian Peloponnesus. The moon's shadow, making a path of totality about 50 miles wide, will sweep in a direction north of east across the Ægean Sea, Istanbul and the Black Sea and will pass

south of Rostov and Stalingrad, across Orenburg and over Omsk and Tomsk in Siberia.

An expedition consisting of six scientists from Georgetown University and the National Geographical Society, under the leadership of Dr. Paul A. McNally, Director of Georgetown College Observatory, will leave America in April to take photographs during the two and a half minute total eclipse. It is announced that the headquarters of the expedition will be established near Orenburg, 775 miles south-east of Moscow, over which the centre of the moon's shadow will travel during the eclipse.