

Rothamsted Experimental Station

ROTHAMSTED must surely have appeared to most of its scientific visitors as the embodiment of stability, and it has come as a great shock to learn that its historic fields are threatened by the builder. When Lawes in 1889 set up the trust that governs the Station, he did not give the classical experimental fields or the land on which the laboratories stand, but only the use of them for a period of years. After his death it was found impossible to work the experiments without taking on the Home Farm from the family trustees, and this was done in 1911; but some of the highly important fields were let to Rothamsted on a six-monthly arrangement only. Even so, the farm remained awkward and difficult to work, being split into three separate pieces, easy access to which was possible only by courtesy of the estate and the tenant. With the encroachment of the builder a new situation has arisen. The family is proposing to give up possession and to put the whole estate into the market. The situation has been closely examined by the Lawes Agricultural Trust Committee in consultation with the staff of the Ministry of Agriculture, and the conclusion has been reached that Rothamsted must own the land on which it is working. An appeal for £30,000 has therefore been issued over the signatures of an influential group including the Duke of Devonshire; the presidents of the Royal Society, the Royal Agricultural Society, and the National Farmers Union; Lord Clinton, the chairman of the Rothamsted Committee; Sir Daniel Hall, the late director and Sir John Russell, the present director of Rothamsted.

It is greatly to be hoped that the appeal may succeed. The sum required is not large having regard to the area of land involved (515 acres) and to the fact that the purchase includes also Rothamsted Manor House, a Jacobean mansion, without which, it is understood, the land could not be acquired. Rothamsted has a record of more than ninety years to its credit; its first triumph was the discovery of the value to agriculture of artificial fertilisers, and of the way to make them on the large scale; it was on the Rothamsted fields that they were first tried on the large scale, with the result that the fertiliser manufacturing industry in various countries now has an annual output of some 35-40 million tons. It is not, however, because of past triumphs that Rothamsted deserves to survive. With a staff of some sixty scientific workers, it is an active centre of research on agriculture, soils, fertilisers, plant nutrition, statistical methods in biological science, plant pathology, entomology, and bees, while from its laboratories there has gone forth a steady stream of young men and women to take up high posts in practically all the more important agricultural research institutions in the Empire. Further, agricultural experts from all parts of the world go to work in its laboratories, to study its methods and its results. Its essential characteristics are the spirit of co-operation between the various departments which greatly facilitates border-land work, and the close connexion between field and laboratory, which it is now hoped to put on to a permanently secure basis.

Mr. H. Dennis Taylor

THE council of the Physical Society has awarded the eleventh Duddell Medal to Mr. Harold Dennis Taylor. This medal is given "to persons who have contributed to the advancement of knowledge by the invention or design of scientific instruments, or by the discovery of materials used in their construction". Mr. Taylor has lived and worked in a period which must always be regarded as of the first importance in the development of optical instruments. The work of Abbe and Schott may be said to mark the beginning of the modern period in lens construction. At this time, Dennis Taylor was the optical manager of Thomas Cooke and Sons, of York, a firm celebrated for its astronomical and surveying instruments. Large astronomical refractors of that period suffered from a serious defect, the so-called secondary spectrum, a residual defect remaining when the normal conditions for the removal of chromatic aberrations have been satisfied. Taylor removed this defect by employing three glasses, and with rare skill and insight devised an objective in which not only the purely optical problem was solved, but also the important practical problems of giving accuracy of form to large lenses of different shapes, and, allowing for their deformation in use. In these first triple apochromats, the colour correction is so good, and is so successfully combined with the other fine corrections needed, that the same instruments may be used both for visual and for photographic work. A number of large telescopes of this type are in regular use, among them two, of apertures $12\frac{1}{2}$ in. and 12 in., at Cambridge; other 12 in. instruments of this design are in use at Rio de Janeiro and at Kodaikanal in India.

In 1893 Mr. Taylor took out two patents for photographic lenses, which were later put on the market as the well-known Cooke lenses. In the specifications of these lenses, nothing is more striking than the treatment of the theory which leads to the method of eliminating coma simultaneously with curvature and astigmatism. In later years Mr. Taylor has not lost the skill and originality he displayed in his earlier inventions. Many of these fall outside the field in which physicists are specially interested. Mention should, however, be made of the telescope in which he showed that it is possible to combine a large aperture and a large field of view with freedom from aberrations comparable with that attained in the Cooke lenses. This is undoubtedly an achievement of the first order, and may prove of great value in scientific work. Mr. Taylor has not only made outstanding advances in the construction of lenses, but he has also written a systematic treatise, "A System of Applied Optics", which will enable the physicist of the future to understand the scientific basis on which the art of lens designing rests.

Major John Wesley Powell, 1834-1902

THE centenary occurs on March 24 of the birth of Major John Wesley Powell, the distinguished American explorer, geologist and ethnologist. Born