

Worthington was particularly good. His delightful voice and masterly style invariably held his audience up to the last moment. Occasionally he lectured to the convicts at Princetown, and twice the present writer helped him with experiments and lantern slides, the first lecture being on astronomy and the second on the dynamics of rotation. On the first occasion it did not seem possible that an audience of 1000 convicts would be entertained with such a subject as astronomy. But Worthington was in his best form, and held their attention from first to last. The second lecture was even more successful than the first, owing to the experiments.

Worthington's original work in physics is well known. He published papers on surface-tension, the stretching of liquids, the splash of a drop, and other subjects. All his work was marked by great experimental skill, especially that on the stretching of liquids and on splashes. He devoted a large amount of time to the latter subject. The apparatus used was simple, but in his skilful hands the results obtained were accurate and beautiful. Of the many hundreds of experiments made, he only published those that brought out points in a connected chain of phenomena.

He published several scientific works, the chief of which was on the "Dynamics of Rotation." Marked by great lucidity of style, this book ably filled a place in the library of physics. He also wrote and had printed a number of pamphlets on wave motion, hydraulics, statical and current electricity, and optics, for private circulation among his students. These were all most carefully prepared after much discussion with his assistants.

Worthington was a man of strong and decided character; having marked out a line of action, he stuck to it, and fought for it with all his might. In fact, he rather loved a fight, being a Lancashire man. His considered judgments were always sound, but he was impulsive at times. He ruled his department at Keyham on the principle that a headmaster should make his presence felt, and in that he succeeded; on the whole, he ruled with much wisdom, and undoubtedly the many officers who passed through his hands will recall his influence on them as entirely for their good.

To his friends and those who understood him, Prof. Worthington's death is a great loss.

PROF. JOHN WRIGHTSON.

THE death of Prof. John Wrightson, on November 30, at seventy-six years of age, removes a well-known authority and writer from the agricultural world. As professor of agriculture (1864-79) at the Royal Agricultural College, Cirencester, he formed one of a small but eminent group of teachers, including Church and Fream, who have left a lasting mark on their subject. After his departure from Cirencester he founded Downton College, of which he was president until it closed in 1906 from inability to compete with State-aided institutions. Many of his former pupils, both at Cirencester and Downton, have

done much to promote the improvement of agriculture. For some years Wrightson was professor of agriculture and agricultural chemistry at the Royal College of Science, and chief examiner to the Science and Art Department in the "Principles of Agriculture."

As a writer Wrightson was distinguished by his careful selection of matter and by lucidity of style. He and Principal Newsham recently compiled a "Text-book of Agriculture" which is extremely practical in nature and has been much appreciated by many educational institutions. For many years Prof. Wrightson was agricultural editor to the *Times*, and wrote the periodical reports on crops up to the time of his death. His intimate friends, and they are many, will feel the loss of his genial personality and old-fashioned courtesy. His intellectual powers remained unimpaired by age, and his unobtrusive generosity will be remembered with gratitude by many. His name will always occupy an honoured place in the history of British agriculture, especially as regards the educational developments of which the Royal Agricultural College, the Royal Agricultural Society of England, and the Board of Agriculture (when Sir Thomas Elliott was Secretary) have been pioneers.

J. R. A.-D.

NOTES.

THE question of national laboratories of scientific research has been brought forward recently in France. In the *Comptes rendus* of the Academy of Sciences for November 13 is a preliminary report by a committee composed of MM. Jordan, Lippmann, Emile Picard, d'Arsonval, Haller, A. Lacroix, Tisserand, and Le Chatelier on this question. It is pointed out that all the great industrial nations possess national laboratories of scientific research, systematically directed towards the study of technical problems. The National Physical Laboratory in England, the Bureau of Standards and the Carnegie Institution in the United States, the Physikälische Reichsanstalt and the institutes founded by the Wilhelm Gesellschaft in Germany are given as examples. France has no corresponding institution, and after a full discussion of the questions of control, staff, and work to be done, the following resolution was unanimously carried:—"The Academy of Sciences, convinced of the necessity of organising in France, in a systematic manner, certain scientific researches, expresses its wish that a National Physical Laboratory should be started, for the prosecution of scientific researches useful to the progress of industry. As in other countries, this laboratory would be placed under the control and direction of the Academy of Sciences." On November 27 this question was further considered by the academy, and it was suggested that the general direction of the laboratory should be entrusted to a council, one-half of the members to be nominated by the academy, one-quarter representatives of the State departments, and the remaining quarter delegated by the principal industrial interests. Certain existing State laboratories might be affiliated to the National Laboratory. A considerable grant for establishment and maintenance will be necessary.

A PROLONGED trial, which has lasted 145 days, the longest British trial with the exception of the Tichborne case, and concluded with the longest speech on record in the British Bar, illustrates the inconvenience