

spare, and may be sent. Of shrubs, rosemary, lavender, lavender cotton, box, woodbine, and many others should be planted.

The trustees, in their circular, refer to several early gardening books which give accounts of the plants in cultivation in the latter part of the sixteenth century, but they omit to mention the excellent book by the late Canon Ellacombe, a keen student of Shakespeare, whose "Plant-lore and Garden Craft of Shakespeare" is a mine of useful information on the plants in cultivation in Shakespeare's day. The list of plants grown in the garden at Bitton vicarage in 1831, reprinted in the recently published memoir of Canon Ellacombe, might also well represent what would have been found in a garden three hundred years ago, and should be referred to by those anxious to assist in the good work.

Fortunately, there are still collections of the old roses from which it may be possible to supply plants for the "Great Garden." Anyone having any of the old-fashioned plants suitable for the garden should send them to Mr. Frederick C. Wellstood, secretary to the trust, Shakespeare's Great Garden, New Place, Stratford-on-Avon, by whom they will be gratefully acknowledged. The names of the donors will be preserved at Nash's House, adjoining New Place, which was once the property of Thomas Nash, the husband of Shakespeare's granddaughter Elizabeth.

There are probably many people who would wish to take part in this interesting tribute to Shakespeare's memory, but have no flowers to send; contributions in money from such will be equally acceptable, and should be sent to the secretary to the trust.

A RESEARCH INSTITUTE FOR NEW ZEALAND.

UNDER the will of the late Thomas Cawthorn, of Nelson, New Zealand, the sum of 240,000l. was left for the founding of a technical institute. The trustees were unanimous in desiring that the Cawthorn Institute should be a research institution, and appointed a private commission of scientific men to advise as to the best method of procedure. The commission consisted of Sir J. C. Wilson, President of the N.Z. Board of Agriculture, Profs. Benham, Easterfield, Marshall, and Worley, and Dr. Leonard Cockayne. At the request of the trustees, the commissioners have consented to become an honorary advisory board. The main recommendations of the commission have been adopted by the trustees. The chief work of the institute is to be "instruction in and performance of scientific research; such research to be definitely related to the industries of Nelson and of the Dominion."

A beautiful, well-wooded site overlooking Tasman Bay has been secured, the area being approximately 20 acres and the distance from Nelson about three miles. It is expected that the buildings will be commenced at an early date. At the last meeting of the trustees it was decided, with

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the approval of the advisory board, to offer the position of director to Prof. T. H. Easterfield, professor of chemistry at Victoria College (University of New Zealand), Wellington, who has accepted the position. Mr. T. Rigg, of the Cambridge School of Agriculture, a New Zealand 1851 Exhibitioner, has been appointed agricultural chemist; other staff appointments will be made shortly.

A liberal scheme of scholarships and fellowships is arranged, so that university graduates may be attracted to carry out investigations under the guidance of members of the staff.

An annual "Cawthorn Lecture" has been established. The 1917 lecture was delivered by Prof. Easterfield on "The Aims and Ideals of the Cawthorn Institute"; the next lecturer was Prof. Benham, and the lecturer in 1919 was Dr. L. Cockayne.

Questions having been raised as to the legal right of the trustees to establish a research institute, an originating summons was taken out under the Declaratory Judgments Act. The decision of Mr. Justice Chapman was to the effect that the scheme set out in the report of the commissioners falls, in its main features, within the terms of the testator's intentions. It is proposed to introduce a Bill embodying the chief points of the judgment in the New Zealand Parliament next session.

Though it is intended that the work of the institute is to have a distinct economic bearing, it has been made clear that the trustees recognise that no sharp line can be drawn between technical and scientific research, and that the term "technical" will be understood in a broad and liberal sense.

DR. CYRIL G. HOPKINS.

STUDENTS of agricultural science in all countries will learn with regret of the death on October 6 of Dr. Cyril G. Hopkins, the distinguished head of the department of agronomy in the University of Illinois. Dr. Hopkins had for the past twelve months been studying the exhausted soils of Greece under the auspices of the American Red Cross. He had written his report, seen it translated into Greek, and received a decoration from the King of the Hellenes. He was on his way home, but when three days out from Gibraltar was suddenly struck down with congestion of the brain, with malarial complications.

Dr. Hopkins's chief service to agriculture was his urgent and persistent advocacy of the need for the honest and adequate use of fertilisers. His region of operations was the State of Illinois, of which he had a very extensive knowledge. It was the present writer's privilege to accompany him on an agricultural tour through this State in 1912, and to learn at first hand some of his interesting agricultural deductions and conclusions. Dr. Hopkins's critical scientific outlook was manifested in his lectures and writings. Besides being popular with his students, he had a great faculty for getting on well with farmers, and was obviously a welcome guest in their homes. English agri-

cultural students will remember with pride his high opinion of the work of the Rothamsted Experimental Station, with which he was unusually well acquainted. The Rothamsted data were constantly used by him in lectures and writings, and he maintained his personal interest in the work right up to the time of starting for Greece.

Two of Dr. Hopkins's books are well known in this country. One—"The Story of the Soil"—was written in the main during his long railway journeys in the States; it is an attempt to introduce scientific facts about the soil into the dialogue of a novel. It is not less attractive than other novels written with a purpose, and it is light reading. His more serious book is entitled "Soil Fertility and Permanent Agriculture"; it contains valuable summaries of the results of the more important field experiments, and an interesting and illuminating discussion. His own view was narrower than would be usually accepted by the younger generation of workers in America or in this country; he considered soil fertility to be essentially a matter of nitrogen, phosphate, and potash, and to be expressible in the terms of the actual weights of these substances in the soil. There are cases where this view would suffice, and many appear to have come within Dr. Hopkins's experience. These, however, would now be regarded as limiting rather than as normal cases, and more generally fertility would be considered to be the outcome of many factors, some chemical, some physical, others, again, biological. But Dr. Hopkins did much good work, training a splendid body of students, and developing a department which has added lustre to the great University of Illinois.

E. J. RUSSELL.

NOTES.

WE announce with deepest regret the death on Monday, December 29, at seventy years of age, of Sir William Osler, Bart., F.R.S., Regius professor of medicine in the University of Oxford.

MR. R. NATHAN, late Indian Civil Service and author of works on the history of plague in India and the progress of education in India, has been promoted by the King to the rank of K.C.S.I.; and Mr. G. S. Sankey, Inspector-General of Forests to the Government of India, has been given the honour of K.B.E.

DR. F. BROILLI has been appointed professor of geology and palæontology in the University of Munich in succession to the late Prof. A. Rothpletz. Dr. Broilli was a pupil of the late Prof. K. A. von Zittel, and is well known for his numerous contributions to vertebrate palæontology.

WE learn from Dr. Tolmatcheff, a Custos of the Russian Academy of Sciences, who is now in London, that when he left Petrograd early last summer the collections and libraries of the Academy, the School of Mines, and the Geological Survey were intact, and scientific men were being sympathetically treated by

the Bolshevik Government. The most important specimens of the Permian reptiles collected by the late Prof. Amalitsky in northern Russia had been removed from Warsaw to the museum of the Academy of Sciences at Petrograd.

THE death is announced, in his sixtieth year, of Dr. Louis Valentine Pirsson, who had been professor of physical geology since 1897 at the Sheffield Scientific School at Yale, where for several years previously he had held various minor posts. Prof. Pirsson was a geologist on the staff of the U.S. Geological Survey and an associate editor of the *American Journal of Science*. He was the author of numerous scientific memoirs, text-books, and papers on geological and mineralogical subjects.

THE Photographic Arts and Crafts Exhibition, which was held annually until the war intervened, is to be resumed in the coming spring. It is renamed the Photographic Fair, and will be held at the Horticultural Hall, Westminster, on April 16 to 24. As usual, the Professional Photographers' Association will hold a congress at the same time in connection with the exhibition, while the Photographic Dealers' Association will, for the first time, organise a congress of photographic dealers. It is intended to afford dealers special facilities for examining the exhibits. The organising secretary of the fair is Mr. Arthur C. Brookes, Sicilian House, Southampton Row, W.C.1.

THE death of Mr. J. Hartley Wicksteed on December 16, at seventy-seven years of age, is announced. *Engineering* for December 19 gives some particulars of his career. Probably his inventions which have had most bearing on engineering progress are his vertical single-lever testing machine and his horizontal universal testing machine. Mr. Wicksteed was connected with the Institution of Mechanical Engineers for more than fifty years, and was president in 1903-4. He was one of the first members of council of the Yorkshire College, Leeds, afterwards becoming a life governor of the University; and through this and other local activities he exercised a wide influence. He became a member of the Institution of Civil Engineers in 1889.

BY the death of Dr. Harold Cecil Greenwood a few weeks ago, at thirty-two years of age, British engineering chemistry has lost one of its most promising younger members. Dr. Greenwood was always a careful and accurate worker, and applied that characteristic to even the smallest detail in every problem which he took up. As a result his work was exact; his data on the boiling points of metals, published in 1909, are generally accepted as the most accurate existing upon the subject. During the last three years of his life Dr. Greenwood was engaged on behalf of the Government on an extremely laborious undertaking: the construction of an experimental synthetic ammonia plant for the preparation of ammonia from its elements. In this work his training with Prof. Haber at Karlsruhe stood him in good stead, but it was no easy matter to translate laboratory experimental work to the semi-technical working-plant