Obituary Notices

Dr. J. W. Capstick

JOHN WALTON CAPSTICK, who took a prominent part in the work of the Cavendish Laboratory from 1891 to 1898, and in the administration of Trinity College from 1895 until 1910, was born at Lancaster on August 31, 1858, and educated at the 'Friends School' in that town. In 1880 he went to Owens College, Manchester, which was then a part of Victoria University; he won at Owens the senior Dalton mathematical scholarship in 1882 and took first class honours in mathematics at the examination for the B.A. degree at the University of London in 1883. He then took a teaching post in the University of Dundee, saved some money, and entered Trinity College, Cambridge, as a sub-sizar in 1888. He was elected to a sizarship in 1889 and to a scholarship in 1890. He took a first class in Part I of the Natural Sciences Tripos in 1890, and one in Part II, with distinction in both physics and chemistry, in 1891.

In that year, Capstick began original research at the Cavendish Laboratory on the values of the ratio of the specific heats in gaseous compounds of various types. He was a very good experimenter, a skilful manipulator, and very persevering, and was never content until he always got consistent results. These researches, which gave valuable additions to our knowledge, were published in two papers in the *Philosophical Transactions of the Royal Society* for 1894 and 1895. They had much to do with his election to the Coutts Trotter scholarship in 1892 and to a Trinity fellowship in 1893. His next research was on the relation between the 'cathode fall of potential' in compound gases of different types; he was, however, unable to get consistent results; we know now that a mere trace of impurity produces a great effect on the cathode fall, and to remove these traces requires methods of producing high vacua which had not been invented at that time.

In 1895 Capstick was appointed lecturer in natural sciences in Trinity College in succession to Glazebrook, who had been appointed senior bursar; he gave lectures at the laboratory to candidates for the Natural Sciences Tripos, and in 1898 he took over the lectures for medical students which Glazebrook had given for many years. He was appointed to the very arduous post of junior bursar at Trinity College in 1910, and though he still continued to give some lectures at the Laboratory he had no time for research. He was a very successful junior bursar; he liked the work and did it very well.

Capstick had an exceptionally wide range of interests and activities. He took an interest in motoring from its very early stages, and kept in touch with its development. Thus, he was one of the first to drive a motor-tricycle, then he tried a steam car; he must have tried about half a dozen types of cars in his time and was always convinced that the new one was much better than the last. He turned his skill as a driver to good purpose during the Great War; he volunteered for the Red Cross, and for a

year drove a motor ambulance for the French Army. He was always anxious to help other people. When at the very beginning of the War the Cloisters in Nevilles Court in Trinity College were used for a military hospital, he visited the hospital regularly and often after talking to a patient he would take his photograph and give him copies to send home to his friends. He was an expert photographer, but it required more than photography to think of doing a deed like this.

Capstick had a great love for music, and it was one of the chief interests of his life. For many years he took the leading part in teaching acoustics to the candidates for musical degrees. He was not merely a good lecturer on music but was also a good musician and a good player of that exceedingly difficult instrument the French horn. For years a regular attendant and valued member of the orchestra of the Cambridge University Musical Society.

Capstick's health broke down suddenly about five years ago, and for the rest of his days he had to live the life of an invalid; he died at his house in Cambridge on April 27. His old friends cherish the memory of the help, the kindness and the good companionship they received from him. J. J. T.

Prof. S. Pennington

PROF. SYDNEY PENNINGTON, who died at Newport, Salop, on July 19, was born in 1869 and received his early education at Giggleswick School under the headmastership of the Rev. George Style. After leaving school in 1888 he had four years experience of practical agriculture in Shropshire. The next three years he spent in study at the Royal (Dick) Veterinary College, Edinburgh, and the Royal Veterinary College, London, obtaining the diploma of M.R.C.V.S. in 1895. After this he again returned to farming until 1902, when he decided to enter upon another course of study. Consequently, at an age considerably beyond that at which men now commence their academic career, and with a very thorough knowledge of farming practice, he proceeded to the University of Edinburgh, whence he graduated with the degree of B.Sc. in Agriculture in 1905. His first teaching appointment was as lecturer in veterinary hygiene in the School of Agriculture at Ghizeh in Egypt. In 1908 he returned home, and was in that year appointed lecturer in agriculture at what was then University College, Reading. In recognition of his work he was elected the first professor of agriculture at Reading in 1920. After twenty-five years service to the University of Reading, he retired in 1933, and was accorded the title of emeritus professor.

Pennington will be remembered best as a great teacher by the many agricultural students who passed through his classes. He was himself so full of enthusiasm for his subject that he readily infected others and especially young minds. This was even more marked in his farm classes, where he drew so largely from his personal experiences. He had the secret

of making his students feel they were listening to one who spoke from living contact with a living world. In addition to his teaching duties, Prof. Pennington had charge of the University Farm. When he commenced his work at Reading in 1908 he set himself the task of grading up a herd of dairy shorthorn cattle that would be eligible for registration in Coates' herd book, and at the same time of establishing a herd of cows on the University Farm free from tuberculosis and of good milking type. This he accomplished several years before his retirement, and the herd remains as a record of achievement on the present University Farm. The herd of dairy shorthorns at the National Institute for Research in Dairying was founded largely on cattle of Pennington's breeding.

Though neither an orator nor debater, Prof. Pennington spoke with a sincerity of conviction and a directness of purpose that commanded attention. He loved what was best in literature and art, and gathered together a surprising amount of knowledge and information on many and varied subjects. He was absolutely devoid of pretentiousness or seeking after effect. Pennington carried into everyday life a dignity of thought and conduct that unconsciously raised the tone of those about him.

———— J. S. L. WALDIE.

Count Robert de Montessus de Ballore

ROBERT FERNAND BERNARD DE MONTESSUS DE BALLORE, whose death occurred towards the end of 1936, was born at Lyons on May 20, 1870. He belonged to one of the oldest families of Burgundy. His mother was a great-granddaughter of Philibert de Commerson, the botanist of the Bougainville expedition, his uncle Ferdinand de Montessus was known as an ornithologist, and his elder brother Fernand was a distinguished seismologist who founded an observatory at Santiago in Chile. For a time Robert de Montessus contemplated a military career, but in his late twenties he made up his mind that such a life was incompatible with a streak of independence in his character, and he began to study mathematics at the Sorbonne. In 1903, while still preparing a dissertation for his doctorate, he was invited to Lille by his friend Robert d'Adhémar, himself a distinguished mathematician, and there he was appointed professor of general mathematics in the Faculty of Science.

Robert de Montessus worked in many fields. Algebra owes to him a fundamental simplification in the use of Sturm's theorem, based on the method of successive approximations; his process is one for evaluating, to an arbitrary degree of accuracy, the real roots of numerical equations, transcendental as well as algebraic. The theory of elliptic functions attracted his attention, and he was stimulated by Halphen's pioneering work to obtain beautiful theorems on the representation, the singularities, and the classification, of algebraic skew curves; he studied carefully the twisted quartic of the first kind, that is, the curve of intersection of two quadrics, showing in detail as Halphen had shown in general terms that the current co-ordinates on this curve are expressible as elliptic functions of a single parameter.

In an important memoir on algebraic continued fractions, which was crowned by the Academy of Sciences, de Montessus presented a body of results constituting great advances in this difficult theory. Starting from a certain fraction which is convergent throughout the whole plane, except possibly on the rectilinear segment joining two points if the function represented by the fraction has two singularities, he deduced that analytic continuation by means of a continued fraction is not impeded by poles, or by algebraic or logarithmic singularities.

In his later years, de Montessus devoted much attention to the theory of probability, which he proposed to found on Bernoulli's theorem, regarded as an experimental fact. He tried also to find a satisfactory theory of correlation which should be applicable when the number of observations is small, and he developed some ingenious ideas on weighted probabilities.

About twenty years ago, de Montessus undertook the publication of the "Index Generalis", an annual reference work now well known throughout the scientific world and of inestimable value to every investigator. It is hard to conjecture the number of practical difficulties which de Montessus had to overcome in organizing this immense mass of data on the universities and learned societies of the world; the scientific qualities of which he had given evidence elsewhere came to his aid here.

In 1931, during a mission to Central Europe on behalf of the French Government, de Montessus gave courses of lectures on various branches of mathematics in Warsaw, Cracow, Lwow, Budapest, Vienna and other universities.

Robert de Montessus, has left the memory of a modest and conscientious scholar, an upright man, and a firm friend.

———— HENRI VILLAT.

WE are indebted to Mr. E. Mather for the information that the early training of his father, Prof. Mather, was that of an engineer, not that of a carpenter as stated in the obituary notice in NATURE of July 17. Prof. Mather came from a family of engineers. We also learn that, during the Great War, Prof. Mather devoted much time to the invention and development of a device for giving warning of the approach of enemy aircraft.

———— WE regret to announce the following deaths:

Prof. P. E. Brown, head of the Department of Agronomy in the Iowa State College, known for his work in soil science, on July 8, aged fifty-one years.

Lieut.-Colonel E. G. Ffrench, known for his researches in tropical medicine, especially dermatology, on July 25.

Prof. D. M. Lewis, emeritus professor of physics in the University College of Wales, Aberystwyth, on July 28, aged eighty-five years.

Prof. J. Wilhelm Michaelsen, head of the Department of Natural History in the Hamburg Museum, an authority on the Oligochæta, on February 18, aged seventy-six years.