

nected with the growth of the University and its colleges, as well as of Eton College. Four years later, in 1890, "The Life and Letters of Adam Sedgwick" was published by J. W. Clark, in collaboration with Prof. T. McKenny Hughes.

As an antiquary, Clark was specially concerned with libraries, and he was an acknowledged master in matters relating to their furniture and fittings. Some of his results in this line of investigation were published in 1901, under the title of "The Care of Books." His interest in libraries took a practical shape in the work he devoted to the University library, as shown, for instance, by his success in raising, within the last few years, a sum of 20,000*l.* in order to place the finances of that institution on a more satisfactory basis. The Fitzwilliam Museum is another institution to which Clark devoted much of his time, and to which he rendered innumerable services. He was a member of the council of the Cambridge Antiquarian Society for forty-nine years, and he read more than fifty papers at meetings of the society.

As a zoologist, Clark's principal interests were connected with marine mammals, as is exemplified by the fine collections of Cetacea, Sirenia, and Pinnipedia which he made for the museum of zoology. His best-known zoological publications refer to these groups of animals, and special reference must be made to his papers on eared seals, published in the Proceedings of the Zoological Society in 1873 to 1884.

During the last nineteen years of his life, Clark was fully occupied by the duties devolving on him as registrar of the University. In this capacity his extraordinary knowledge of the early history of Cambridge and of its forms and ceremonials, his ability in the care and publication of documents, and his acquaintance with procedure were all of the greatest service to the University.

It is difficult to speak dispassionately of Clark's singularly attractive personality, and of the ready sympathy he showed with all sorts and conditions of men.

Advancing years did not take from him the capacity of making new friends, many of whom were chosen from among the younger members of the University.

"Gracious and apt to win the youngest heart,
Yet keep the oldest true!"

These words, written of him by his friend, Mr. A. C. Benson, will express the affectionate regard felt for him by many with whom his loss leaves a blank that cannot be filled. SIDNEY F. HARMER.

PROF MAURICE LÉVY.

IN NATURE of last week the death was announced of M. Maurice Lévy, sometime inspector-general of the Ponts et Chaussées, and professor at the Collège de France. An interesting account of Lévy's investigations in pure and applied mathematics and mechanics is given by M. Émile Picard in an address to the Académie des Sciences, read on October 3 (*Comptes rendus*, cli., 14).

In infinitesimal geometry, Lévy obtained the doctorate in 1867, for an essay on orthogonal coordinates embodying several new and important results. His investigations in this subject also included the study of spiral surfaces. His treatise on graphical statics, of which the first edition appeared in 1874, practically initiated the study of this important branch of applied mathematics in France. The notes at the end of the first edition really constitute original papers on the tension of elastic rods, and on the systems of maximum strength with given amount of material; in them the author discusses the advantages of structures without superfluous connections. A second and en-

larged edition appeared in due course, and the completion of a third edition has been unfortunately cut short by Lévy's recent death.

The subject of elasticity occupied a large share—perhaps the main share—of Lévy's attention. After he entered the École polytechnique in 1856, at the age of eighteen, he indicated a new and simple method of investigating the resistance of continuous beams. The problems presented by systems, one of the dimensions of which is small compared with the others, greatly interested him, and a long memoir was published by him on the flexure of elastic plates. M. Picard speaks in high terms of the ingenuity and ability displayed in this essay, while remarking that a more complete solution of the difficulties occurring in this problem is to be sought elsewhere.

A second problem in elasticity was afforded by the stability of rods or prisms under end-thrust, and Lévy extended the investigation from straight to circular rods, obtaining extremely interesting conditions of stability by means of an analysis involving elliptic functions. To M. Lévy is assigned the credit also of obtaining for the first time the general equations for ductile bodies strained beyond the limits of elasticity, thus responding to the question put by Saint Venant, arising out of Tresca's experiments.

Hydrodynamics formed the subject of Lévy's second paper, dealing with rectilinear vortex motion. In this, the author took a leaf out of Cauchy's theory of optical dispersion in his application of the higher differential coefficients in studying the mutual action of two vortices.

A development of a more practical character was M. Lévy's investigation of the equilibrium of earth and the strength of masonry supporting walls. Starting with the laws of friction, Lévy found the differential equation of the lines of rupture in limiting equilibrium, and showed that, contrary to Coulomb's results, the surfaces of rupture for a prismatic mass of earth are not in all cases planes parallel to the edges of the prism.

It will thus be seen that M. Lévy played an important part in applying analytical methods to the solution of problems of practical interest, and his works constitute a heritage from which workers in applied science cannot fail to benefit greatly.

NOTES.

THE council of the Royal Scottish Geographical Society has resolved to award the society's medal to Prof. James Geikie, F.R.S., for his numerous contributions to geographical research and his great services to the society; and the Livingstone gold medal to Sir John Murray, K.C.B., F.R.S., in recognition of his oceanographical work, and more particularly in commemoration of the completion of the bathymetrical survey of Scottish freshwater lochs.

WE regret to see the announcement of the death, on October 14, of Dr. Sydney Ringer, F.R.S., at seventy-six years of age.

ACCORDING to a Reuter message from Santiago de Chile, official returns show that the world's consumption of nitrate during the past year amounted to 43,996,966 quintals, an increase of 8,000,000 quintals as compared with the previous twelve months.

PROF. HOWARD C. BUTLER, of Princeton, has just returned to that University with an encouraging report of the archæological expedition he has been directing at Sardis, in Asia Minor. The discoveries include a part of the pavement of the ancient city, and the substructure of a large temple of the fourth century B.C. In the necro-