as is well known, for the elucidation of manuscripts and drawings. An ingenious application of electro-endosmose has been for the cleaning of pottery, of which the surface has become encrusted with salt crystals in which some pigment is entangled. The homely method of a good scrub with water would quickly end in disaster, since the precious coloured particles would be scattered far and wide by such treatment. But by immersing the vase in water, and inserting a cathode wire into it as one electrode, and using another wire dipping into the water as the anode, the salt crystals conveniently move off in one direction, whereas the pigment grains are drawn back on to the surface of the vase, to which they can then be anchored by the application of shellac; 30 volts D.C. for about half an hour is enough.

Another striking example of laboratory technique has been the mounting of Foraminifera from the limestone supports of classical fresco murals by means of thermo-plastic resins. Micro-sections can be made in this way from such friable material and preserved for archæological research in a convenient and permanent form.

At the beginning I referred briefly to the task of conservation in general. This is a matter which concerns the man of science very closely; and given the requisite knowledge for, and appreciation of, the task, he should be able to render valuable assistance. The experience gained during the War has been, or is being, turned to good account, and will assuredly influence future practice in gallery construction. With regard to the all-important subject of air-conditioning, it is essential to realize that any scheme must provide not only an appropriate environment for the exhibits, but also for the public. Repository surroundings during the war years can scarcely be considered as sure guides, since their only purpose was to take care of the valuables: the comfort and convenience of visitors did not arise. In short, we are now faced with a much more complex problem. Luckily, as regards relative humidity—the most vital single factor from the technical point of view—the human body is remarkably accommodating, much more so than with respect to temperature. Therefore we can provide a range of moisture-content well suited to the particular material, without the introduction of disagreeable features on that account. More trouble is likely to be met with in Britain in dealing with buildings architecturally unsuitable (as many are), and on account of our erratic climate.

In very general terms, the aim should be to prevent, or at least to diminish, the 'working' of substances like wood, textiles and so forth; or in the language of physics, to restrict the area of the hysteresis loop for wetting and drying to a minimum. This means keeping the moisture-content nearly level, which in its turn indicates the need for a constant relative humidity—say around 60 per cent for most exhibits.

More attention than hitherto will need to be paid to the so-called 'near-surface' effects. In other words, the relative humidity in the centre of a large room is not the same, even in the absence of temperature gradients, as that near the surface of objects placed in it. The reasons for this are complicated, but they point to the necessity of micro-determinations if trustworthy data are to be obtained for precious things, even if they are immersed in a nearly infinite reservoir of air of statistically satisfactory thermodynamic properties.

Given a return to something remotely approaching normality, there are good opportunities in the museum world: openings are not numerous, but they offer interesting careers with plenty of responsibility and scope for originality. But all on one condition. Natural science in such a context is ancillary to the fine arts in the literal sense of the word. She is art's serving maid; yet art must be sympathetic, apt to realize not only what science can do, but also what an objective philosophy can teach. Then all will be well. Such is our intention; and striving to attain it, not weighing our merits, but pardoning our offences, is, I take it, no more than our bounden duty and service.

OBITUARY

Dr. H. M. Tory

HENRY MARSHALL TORY died in Ottawa, Canada, on February 8, at the age of eighty-three. At the time of his last illness he was president of Carleton College, a post which he had filled from 1942 when he was instrumental in founding this institution of higher learning. At that time he had returned to active academic work after having enjoyed a few years of well-earned rest following a long life of high achievements. Thus once again his great talents for organisation were directed towards the establishment of yet another college. Early in his career he had contributed in no small measure to the founding of the University of British Columbia at Vancouver, and later the University of Alberta at Edmonton. He had directed the organisation of "Khaki College" in the First World War, and had been the first full-time president of the National Research Council of Canada. By virtue of his many high offices and as he was by natural bent a philosopher and an earnest educationist, he was widely recognized as one of Canada's most distinguished sons.

Born in Guysboro, Nova Scotia, on January 11, 1864, Tory was educated in the local academy and at McGill University, Montreal, where he graduated, a gold medallist in mathematics and physics, in 1890, and then continued on the staff as lecturer and associate professor, teaching mathematics and physics, and gaining a master's degree in 1896, and a doctorate in science, 1903.

From 1908 until 1928 he was president of the University of Alberta. His successors in office at that western institution have paid moving tributes to Dr. Tory's memory. Dr. R. C. Wallace, who succeeded him and is now principal of Queen's University, said: "He was a stalwart in the cause of world peace and intellectual co-operation, an able exponent of science in the modern world, and a warm friend to distressed peoples everywhere. There are not many men of Dr. Tory's stature in a generation, for he built the things that will endure"; and Dr. Robert Newton, president of the University of Alberta, expressed the feelings of many when he observed: "Dr. Tory was the greatest Canadian figure of his time in the field of education and scientific research".

Always actively interested in all matters concerning the welfare and progress of the Dominion and its people, Dr. Tory found himself chosen time and again to serve on royal commissions and boards established by various authorities to inquire into such diverse subjects as agricultural credits in Europe (1913) and in Canada (1923–24); coal classification (1923–35); the fruit industry in Nova Scotia (1930); and

the coal industry (1936). He was a special commissioner from Canada to the Pan-Pacific Science Congress in Japan, 1926, and it was largely through his efforts that Government authorization was secured for the holding of the Fifth Pacific Science Congress in Canada in 1933. He organised the Congress and served as its president (1930–34). He served as colonel-director of educational services for the Canadian Overseas Forces during 1917–19.

His outstanding qualities as an educationist and leader in science and culture were recognized repeatedly by the award of honorary degrees and other distinctions. He received the honorary doctorate in laws from St. Francis Xavier College in 1906; from McGill in 1908; University of Toronto, 1927; Saskatchewan, 1928; Alberta, 1928; McMaster, 1932; British Columbia, 1932; Western Ontario, 1933; and a doctorate in civil law from Acadia, 1935. He was Governors' fellow of McGill University during 1905–8 and non-resident fellow 1908–15.

A fellow of the Royal Society of Canada, Dr. Tory held office as chairman of the physico-chemical section in 1927 and as president of the Society in 1940. He was a fellow of the Royal Historical Society and had a deep and abiding interest in history, in which subject he lectured at the University of Alberta. He was more especially interested in the history of philosophy and science, and conducted classes in these subjects at Carleton College. The Tory collection in the National Research Library was founded by his friends to commemorate his interest in this field of study.

In February 1923, Dr. Tory was appointed a member of the honorary advisory Committee for Scientific and Industrial Research, and named as chairman in October of the same year. He became director of the laboratories at Ottawa when these were still housed in temporary quarters, and president of the Council in 1927. Under his presidency, construction of the National Research Building was undertaken in 1930. He personally directed the planning of this fine structure, which was opened by Mr. Stanley (now Lord) Baldwin, at the time of the Imperial Economic Conference in Canada, 1932. Before he retired from the presidency of the Council in 1935, he had selected the original staffs for the laboratories and established the standards of ability and performance which enabled the institution to meet the challenge of war as it did.

Those with an intimate knowledge of Dr. Tory's work as president of the National Research Council will feel that his contributions to organised scientific and industrial research in Canada, which are acknowledged to-day, will loom larger still as the years lend perspective to the progress which Canada is making in this field. "An example and an inspiration, this man of the deepest integrity and the fullest public spirit will not soon be forgotten by the generation he served so admirably and so efficiently."

C. J. MACKENZIE

NEWS and VIEWS

Royal Society: New Foreign Members

THE following have been elected foreign members of the Royal Society:

DR. E. J. CARTAN, professor of geometry in the University of Paris and member of the Paris Academy of Sciences, distinguished for his fundamental work in the theory of continuous groups and in differential geometry;

PROF. P. KARRER, professor of chemistry in the University of Zurich, distinguished for his outstanding contributions to the chemistry of natural products, with special reference to the chemistry of the carotenoids, carbohydrates and vitamins;

PROF. H. C. UREY, professor of chemistry and director of the Institute for Nuclear Studies, University of Chicago, distinguished for his discovery of deuterium, for his investigations into the separation and properties of isotopes, and for the application of these discoveries in the development of methods for producing atomic energy;

DR. ØJVIND WINGE, of the Carlsberg Laboratory, Copenhagen, distinguished for his many fundamental contributions to the cytogenetics of plants and animals.

Royal Naval Scientific Service: Sir Charles Wright, K.C.B., O.B.E.

CHARLES SEYMOUR WRIGHT, who has just resigned from the post of chief of the Royal Naval Scientific Service, was born in Toronto in 1887. He was educated at Upper Canada College and the University of Toronto. He won a Wollaston Research Studentship and an 1851 Exhibition Scholarship, with which he proceeded to Gonville and Caius College, Cambridge. He did research work at the Cavendish Laboratory during 1908–10. He joined Captain Scott as scientist to the Antarctic Expedition, 1910–13. After the return of the survivors of this expedition, he spent a year at Cambridge until the outbreak of war. He joined the Royal Engineers in 1914, first as wireless officer to the 5th Corps, during which period he earned the Military Cross. He later became O.C. Wireless of the 2nd Army, and for his services at this time was made a Chevalier of the Legion of Honour. He was decorated with the O.B.E. for his subsequent work in the Intelligence Division of the General Staff.

After he had been demobilized, he became senior assistant to Mr. F. E. (later Sir Frank) Smith, then director of the newly formed Department of Scientific Research and Experiment at the Admiralty. In the same service he was appointed superintendent of the Admiralty Research Laboratory, Teddington, in 1929, a post which he held for five years. He became director of scientific research at the Admiralty in 1934 and carried throughout the Second World War the high responsibilities of this director's position as well as during the rearmament period preceding it. With the formation of the Royal Naval Scientific Service in 1946 and the reorganisation of Admiralty arrangements for the direction of scientific research, he was appointed first chief of the Service. He was made a C.B. in 1937 and a K.C.B. in 1946. All who served under him received help and guidance from a most genial personality. He will be greatly missed by his colleagues and by the scientific workers with whom he came in contact elsewhere.

Mr. F. Brundrett, C.B.

THE Admiralty has announced that Mr. F. Brundrett has been appointed chief of the Royal Naval Scientific Service in succession to Sir Charles