

Obituary Notices

Prof. Henry Balfour, F.R.S.

IN Spencer's "Last Journey" (Oxford, Clarendon Press, 1931), Plate II, will be seen the reproduction of a photograph of Moseley's 1884 biology class at Oxford. The strikingly handsome young man at the very back of the group—he may be distinguished by the rabbit that he is holding in his hand—is Henry Balfour; Baldwin Spencer, Bourne, Hickson, Roth, and other contemporaries also figuring there. That was a momentous year for Balfour, because Moseley induced him, together with Spencer, to help to arrange the collections just then bestowed on the University by General P. H. Rivers at the instance of his friend Tylor. Nine years later, Balfour was appointed curator of the Museum that had meanwhile been fitted out to house and display the rapidly increasing array of ethnological material; and for the forty-six years to come presided, more or less despotically, over the destinies of a treasure-house henceforth filled to bursting point with the spoil of the primitive world.

Though he never limited the range of his biological interests, and numbered both ornithology and geographical exploration among his enthusiasms, Balfour stuck indefatigably to his main business of studying the earlier arts and crafts of mankind according to the comparative method. He had indeed inherited from Pitt-Rivers and Tylor a system of classification somewhat apt to suggest that evolution is a unilinear process. Yet Balfour himself was never under any illusion as to the vagaries attending the propagation of culture, whether technologically considered or in general. Thus his numerous papers—would that he had found the time to compose a systematic treatise on the subject—are primarily concerned with problems of distribution. Before origins can be determined, he would argue, and in order to settle once for all the parts severally played by borrowing and by independent invention, let us exhaustively chart the actual positions in time and space that the evidence enables us to assign to each of our hypothetical types.

Though rarities may gladden the heart of the keeper of a museum, the scientific value as such of Balfour's acquisitions consists rather in a well-authenticated *provenance* warranting their inclusion in some homologous series. Thus when from 1908 onwards Oxford maintained a diploma course in anthropology under the direction of a triumvirate of whom Balfour was one, he fully justified as a lecturer his claim that, despite the wide scope of the physical and social branches of the subject, technology should have strict parity; for he could exploit the educational possibilities of this *tertium quid* as well as any man of his time. Though in the matter of prehistoric archaeology his museum had to share honours with the Ashmolean, he controlled enough material to be able to demonstrate the relations between ancient and modern prehistory; and indeed nowhere was

the doctrine of the age-long continuity of human development better supported by ocular proofs.

To speak of Oxford's debt to Balfour is partly a domestic matter, and, in view of the financial aid forthcoming from the University, it is better not to inquire into the extent of his private benefactions, if indeed Alma Mater can blush. But it is public knowledge that his exploration of the implementiferous gravels of the Victoria Falls, or, again, his travels in Australia, Assam, West Africa and elsewhere, whence his friends so willingly consented to have their pockets picked, made his show-cases the envy of rival institutions. For he had that flair which must ever be the supreme gift of the collector, and could tell at a glance the precise worth, in a scientific and no merely commercial sense, of each scattered piece of material evidence which presently would be fitted into some mosaic revealing a distinctive pattern. Extremely critical, he was slow to construct; but in the independent way of the Scot he could be very tenacious of a formed opinion, if only because of the sufficiency of the knowledge on which it rested. Moreover, his mind had a strong ally in his hand; for he drew beautifully, and had a sound working acquaintance with primitive processes of all kinds, from fire-making to flint-knapping. Altogether, he was a master of his trade, and there are not many like him in the world to provide a fit successor. For the rest he was a very gallant gentleman, whose candid and courteous nature endeared him to his many friends.

Balfour died on February 9 at the age of seventy-six years.
R. R. MARETT.

Prof. Gustav Tammann

WE regret to announce the death in Göttingen at the age of seventy-eight years of Geheimrat Prof. Gustav Tammann, whose researches in the Universities of Dorpat-Jurjew and Göttingen on metallography and the properties of the crystalline and amorphous states of matter have proved to be of far-reaching importance both to pure science and to the metallurgical and glass industries.

Tammann began his life's work after the main laws of heterogeneous equilibria had been propounded by Willard Gibbs and developed by Roozeboom, and his contribution has been that of providing the systematic experimental knowledge and detailed interpretation of heterogeneous systems necessary to establish the thermodynamical reasoning in men's minds as of some value in everyday affairs. One of his first interests was the study of the discontinuities arising during the changes of state in condensed systems, and he devised experimental technique for following such changes over a wide range of temperatures and up to pressures of 10,000 kgm. One of his noteworthy discoveries in this field was that ice,