

and it would seem that this gave physics an added attraction to his students. Evidence of his ingenuity in this direction is apparent in his books.

In 1898 he wrote his first text-book, on "Magnetism and Electricity for Beginners". This was the first of several text-books produced in association with Sir Richard Gregory, which are known to generations of physics students. Much of his time thenceforward was devoted to the preparation of these books, while he still continued his teaching, from which he only recently retired after a period of more than fifty years. He maintained his interest in his books to the end, devoting much care to keeping them abreast of modern developments.

Mr. Hadley had a charming personality, and he was regarded with affection by those who benefited from his instruction. W. S. TUCKER

WE regret to announce the following deaths :

Mr. Will Hay, well known as an actor and also a distinguished amateur astronomer, on April 18, aged sixty.

Mr. R. A. Todd, a Ministry of Agriculture and Fisheries inspector and formerly a member of the staff of the Plymouth Laboratory of the Marine Biological Association of the United Kingdom.

NEWS and VIEWS

Meldola Medal for 1948 : Dr. R. A. Raphael

ON the recommendation of the Council of the Royal Institute of Chemistry, the Society of Macchemists has awarded the Meldola Medal for 1948 to Dr. Ralph Alexander Raphael, in recognition of the contributions he has made to the investigation of new methods of approach to the synthesis of natural compounds. Dr. Raphael graduated in 1941 from the Imperial College of Science and Technology with first-class honours in chemistry, and in 1943 was awarded a Ph.D. for work on acetylenic compounds. During 1943-46 he was head of one of the chemotherapeutic research departments of Messrs. May and Baker, Ltd., and was mainly concerned with penicillin chemistry. He was then awarded an Imperial Chemical Industries fellowship and resumed research work at the Imperial College on the investigation of the potentialities of acetylenic compounds in the synthesis of natural products. In 1947 this work resulted in the total synthesis of the penicillic acid, thus proving its structure beyond doubt. Attention was then turned to the utilization of the peculiar properties of acetylenic compounds to accomplish the synthesis of carbohydrates and their derivatives, and, up to the present, arabitol, ribitol, erythritol, threitol and erythrulose have been obtained. A study is also being made of methods of producing long-chain aliphatic acids of various types. Concurrently, Dr. Raphael is also investigating synthetic routes to compounds containing the vitamin D triene system. He has recently been appointed lecturer in organic chemistry in the University of Glasgow.

Avenue of Human-headed Sphinxes at Luxor

IT has long been known that the avenue of ram-headed sphinxes of Amenophis III which extends southwards from the Temple of Khons at Karnak is the northern end of a processional way once linking the Temple of Karnak with the Temple of Luxor about one and a half miles to the south. On the line of this avenue, Zakaria Effendi Ghoneim, chief inspector of antiquities for Upper Egypt, has recently found a further series of human-headed sphinxes erected by either Nectanebo I or II about a thousand years later, in the late fourth century B.C. The main interest of the new discovery appears to lie, for the moment at least, in the inscriptions on the base of each sphinx. The text records that Nectanebo had "made this road for Amun so that he might make good navigation from Luxor". The god Amun was normally resident at Karnak. The principal occasion

on which he visited Luxor was during the annual festival of Opet, when he was conveyed by river from Karnak to Luxor and the whole city was given over to festivity for many days. The new texts, therefore, either hint that by the end of the Pharaonic period the river journey of Amun during the Feast of Opet had been replaced by a progress by land, or they refer to a new or unidentified Theban feast. As the clearance and excavations round the Temple of Luxor progress, there is every reason to expect that new discoveries will be made, and that fresh light will be thrown on the early history of Thebes. 50

Additional Remains of *Australopithecus* in South Africa

FURTHER discoveries of the remains of the fossil *Australopithecinae* of South Africa are now reported from a new site, Makapansgat, almost 250 miles north of Sterksfontein, where Dr. R. Broom found numbers of skulls and portions of the limb skeleton during 1947 and 1948. Two of the Makapansgat specimens, which have already been described by Prof. R. Dart in the *American Journal of Physical Anthropology* (6, 259 and 391; 1948) and referred by him to a new species, *A. prometheus*, consist of an occipital bone and an immature mandible. These provide additional confirmation of the inferences based on the earlier material that the *Australopithecinae* show in certain anatomical features a remarkable approximation to those hitherto regarded as distinctive of the *Hominidae*. For example, the disposition and extent of the nuchal crest and muscular markings on the occipital bone conform to the human rather than the simian type. The perfectly preserved and unworn anterior premolar in the immature mandible is bicuspid with the cusps of approximately equal height as in man, and thus differs markedly from the characteristic sectorial form of the lower anterior premolar in the anthropoid apes. Still more recently, there have been found at the same site a considerable part of the facial skeleton, a parietal bone, and the iliac portion of a pelvis. According to unpublished reports, the ilium, like the specimen already described by Broom (*Nature*, 160, 430; 1947), is closely similar in shape and proportions to a human ilium, and thus contrasts strongly with that of apes.

Science Museum London

DEMOLITION of the old portion of the Science Museum, London, known as the Southern Galleries,

has now commenced. This building, which had recently become extremely dilapidated, was erected as a temporary structure for the International Exhibition of 1862, and continued to be used thereafter by the Science Museum for exhibition purposes until the beginning of the War in 1939. For many years these galleries have been scheduled for destruction, and owing to their susceptibility to fire and bomb damage were a source of considerable anxiety during the War. The main portion of this old building is now being demolished to make room for a new centre block for the Science Museum, on the roof of which a planetarium is to be erected. It is anticipated that the ground floor and basement of this new building will be available in time to accommodate the science and technology portion of the Festival of Britain Exhibition in 1951. After this, work on the building will be continued and the building when completed will form the centre block of the Science Museum, with four floors of exhibition galleries. Arrangements for the occupation of this portion of the Science Museum are well under way, and it is anticipated that long before this additional accommodation becomes available, detailed arrangements for the display of specially appropriate and attractive exhibits will have been completed.

Scientific Instruments of George III

WHILE he was still Prince of Wales, the future King George III showed much interest in mechanics, optics, astronomy and scientific experiments of all kinds. Thus encouraged, the leading instrument makers of the second half of the eighteenth century constructed many models and apparatus for the instruction of the Prince. As might be expected, these models illustrate the craftsmanship of the period, and collectively they convey a remarkably clear impression of the general field of scientific study and experiment at that time. Fortunately, the instruments were preserved as a collection, and for many years they were kept at Kew Observatory. They were used again for instructing the many children of George III, and in 1841 they were presented to King's College, London. The collection was loaned to the Science Museum in 1926, but since 1928 it has been in store on account of the lack of space. It has now been placed on exhibition again and may be seen, until the end of September, at the Science Museum, South Kensington, London, S.W.7. Historically, the exhibition is of interest, as it covers an important era in scientific development—an era which witnessed the growth of modern physics and chemistry from the 'black magic' and haphazard alchemy of the Middle Ages, the development of such instruments as the thermometer, and great advances in the study of electricity. Science was becoming popular, but at the same time the foundations were being laid for progress on logical lines of experimental and theoretical philosophy. The course of instruction and the experiments performed tended to follow closely the lines laid down half a century earlier by the Dutch philosopher 'sGravesande, himself a disciple of Sir Isaac Newton, and one of the gems of the present exhibition is the 'Philosophical Table', which is similar to that designed by 'sGravesande. In the parlance of this more vulgar age, a 'philosophical table' is a 'laboratory bench'. Other items worthy of special note are the vacuum pumps made by George Adams and two fine microscopes constructed about 1750.

Commission on South African Museums

716

LAST year, in *Nature* of November 27, p. 861, it was reported that the Government of the Union of South Africa had set up a Commission to inquire into the financial position of certain State-aided institutions which, it was then understood, included certain museums, art galleries and zoological gardens. An announcement in the *Government Gazette (Pretoria)* for March 4 of this year extends the field of inquiry, and lists the institutions concerned, as follows: the South African Museum, Cape Town; the Transvaal Museum, Pretoria; the Natal Museum, Pietermaritzburg; the Orange Free State Museum and Monument Museum, Bloemfontein; the Voortrekker Museum, Pietermaritzburg; the South African War Museum, Johannesburg; the South African National Art Gallery, Cape Town; the Michaelis Collection, Cape Town; the National Zoological Gardens, Pretoria; and the National Botanical Gardens, Kirstenbosch.

The inquiry now covers not only the financial aspects of these institutions, but also their organisation and activity. The Commission is directed to make investigations and recommendations regarding the co-ordination of the research carried out by each institution; the possibility of co-operation between the named institutions, universities and other institutions towards a greater economy and efficiency in the preparation of material for exhibition and educational purposes; the advisability of forming a national board of trustees, or similar organisation, for the co-ordination of the work of the named institutions; the advisability of co-ordinating the research and education functions of the institutions and certain others not State-supported; the advisability of all or some of the named institutions becoming full State institutions; the incorporation of war museums in other museums; and the establishment of a science museum in Johannesburg. If the Commission finds that the last-mentioned is desirable, it is asked to make recommendations for its organisation and control. For the purpose of the inquiry outlined above, the Commission is given full authority to consult any person and Government book, record, etc. The wide scope of the inquiry and its importance demonstrate the formidability of the Commission's task, and it is indicative of a strong Government interest which will ultimately not only strengthen the efficiency of the Union's museum services, but will also point the way to even further developments.

Survey of India: Annual Report

716

THE Survey of India has issued a Civil Activities Report covering the period April 1, 1945–March 31, 1946, which replaces the detailed General and Geodetic Reports which have been in abeyance since 1939 but are to be introduced for the year 1946–47. Much of the work of the Survey during the year was directed towards the furtherance of a number of long-term projects, such as the Kosi, Mahanadi and Tista irrigation schemes. For these schemes somewhat rigid priority assessments had to be made owing to the shortage of men and instruments, and new and cheaper survey expedients were adopted to provide preliminary information. Even so, the routine topographical programme received scant attention. With the widespread resumption of civil surveys, the concentration of resources in Dehra Dun has been reversed, and the Eastern Circle controlling work in Assam, Bengal, Bihar and Orissa has been