

in the skin from which vitamin D is produced. Further development has involved intensive team work by physicists, chemists, and biologists, leading to the production of calciferol, the actual substance of vitamin D. This has not only made important contributions to organic chemistry as such, but also has brought improved practical powers to the medical administrator.

ANOTHER example of intensive work has been in the study of the so-called viruses, which cause widespread and often ruinous diseases in men, animals, and plants. New physical methods have been devised for their optical study and their separation and measurement by means of filters. The better study of these minute particles has not only an obvious utilitarian value, but also has extreme intellectual interest. They are units, apparently alive and reproductive, yet far smaller than any living cell which has hitherto been regarded as the minimal organisation capable of displaying life and reproduction. The whole story of medical research, whether viewed in its wide extent or followed to its intensive studies, illustrates the absurdity of the artificial boundaries that at present tend to separate the different sciences. In the schools, as Lord Chelmsford's Committee has reported, the cleverer boys are 'caught' for physics and chemistry, while the scholarship system, especially at Oxford and Cambridge, encourages a narrow specialisation which is, unfortunately, continued during undergraduate life. Most physicists and chemists proceed throughout school life and to a university degree without ever becoming acquainted with the interest of matter endowed with life. Many students lose opportunities they might have welcomed for fruitful work in the biological field, and the whole cause of medical progress suffers. Of students who proceed to medicine, many are again lost from the research field because of the great attraction offered by the natural human interest of professional work, or because of financial needs or desires.

Institute of Physics

LORD RUTHERFORD, presiding at the annual general meeting of the Institute of Physics, said that in the short time since its foundation, remarkable progress has been made towards the achievement of the original intentions of its founders. There has been a rapidly growing recognition of the importance of the physicist, not only in the academic world, but also in industry, and Lord Rutherford considers that the Institute can justly claim some of the credit for this. The properly trained physicist has the power to form his judgment by performing experiments, and if it be a subject where little is known, the cost of the investigation may only be a matter of a few shillings. It is very important that such an Institute should include every type of physicist among its members, and naturally to physicists in some of the sheltered posts, such as colleges and universities, it is not quite clear what particular advantages can be gained by joining the Institute, when they already have so many facilities at their own door. But taking a long view, Lord

Rutherford said, it is the duty of every physicist to join the Institute, wherever he may be, and so help on the recognition of the profession that he represents. He looks forward to the time when membership of the Institute will be considered a necessary professional qualification. The standing of the physicist in the scientific world, not only of to-day, but also of to-morrow, depends upon the support that the Institute receives.

Reading Rooms at the Institute of Physics

PRIOR to the annual general meeting, Lord Rutherford opened the new reading rooms at the Institute of Physics. Through the generosity of the Royal Commissioners for the Exhibition of 1851, some rooms have been allocated to the Institute for this purpose, and these have now been comfortably furnished. The Joint Library Committee set up by the Institute, the Physical Society, and the Optical Society has arranged that the libraries shall be combined for the mutual benefit of all, and thus a large number of periodicals and other books are already available for the use of members of the Institute and its participating societies. In addition, a limited number of textbooks and reference books are included in the library. In the course of his remarks, Lord Rutherford said that the opening of these rooms is another example of the co-operation of the participating societies through the Institute, which was one of the purposes for which the Institute was founded. Some of the rare old books belonging to the Physical and Optical Societies were open for inspection during the afternoon. It is hoped that authors and publishers will present suitably inscribed copies of their books, and in this way those whose attention has been directed to new books by the reviews published in the various journals of the Institute and its participating societies will have an opportunity of examining the books more carefully before procuring their own copies.

Game Animals of the British Empire

THE new gallery at the Natural History Museum, which is intended for the exhibition of whales, in replacement of the temporary building erected thirty-four years ago, was finished last autumn, but the economic crisis has interfered with the original plans, and, owing to lack of money, the Trustees have been unable to arrange for the renovation and removal of the large whale models. They decided that, in the circumstances, the gallery might usefully be employed for a comprehensive exhibit of the game animals of the British Empire. The open floor of the gallery has been divided into three parts, devoted to specimens from Africa, Indo-Malay, and Canada and Newfoundland respectively, the first of them being about as large as the other two combined, they themselves being equal. On the walls are suspended more than five hundred horns and skulls, some of the former being the 'record', that is, the largest known for the particular animal. Among the horns shown is the magnificent pair of the Indian buffalo which were included in the Sir Hans Sloane collection received in 1753 and are prominent among the limited number of

zoological specimens which have lasted to our day. With the exception of a white giraffe which has been lent by Rowland Ward, Ltd., all the specimens are drawn from the Museum collections. They show to much greater advantage in their present setting than crowded together in glazed cases in the Mammal Galleries. The exhibit, which has been arranged by Capt. J. G. Dollman, was opened to the public on May 31.

New Botanical Collections

THE Department of Botany, British Museum (Natural History), has received some noteworthy additions during the last two months. His Majesty the King has placed on permanent loan a further collection of Nepal plants presented to him by His Highness the Maharaja of Nepal. The present consignment numbers 253 specimens, which were collected by Prof. K. Sharma; Major L. Dhwoj, who was responsible for the previous collections, died during the expedition. The value of the collection is that it is from previously unexplored mountains. Another collection which will add to our knowledge of the floristics of the Himalayan region has been presented by Capt. F. Kingdon-Ward. It consists of 1233 specimens, and is from the Upper Irrawaddy and the Burma-Tibet frontier. A valuable addition is the gift of the Boswell-Syme British Herbarium by Mr. Frederick J. Hanbury. This contains about 20,000 sheets, in fourteen mahogany cabinets, and will be kept as a separate collection. Boswell-Syme (1822-1888) was the editor of the third edition of "English Botany", and the specimens on which his remarkably accurate descriptions were based are in the collection. The herbarium was purchased by Mr. Hanbury on Boswell-Syme's death, and is in excellent condition. British botanists will now be free to consult the remarkably long series of species which are rarely well represented in modern herbaria. Mr. A. Vernay has presented a set of plants obtained on the Vernay-Lang expedition to the Kalahari desert. This area is very poor floristically, and the 264 species, including twenty type gatherings, are consequently of value in extending our knowledge of distribution.

Acquisitions at the Natural History Museum

AMONG the chief recent acquisitions in the Zoological Department of the British Museum (Natural History) are 60 mammals and 590 birds obtained by the Vernay-Lang Expedition to the Kalahari Desert, presented by Mr. A. S. Vernay; the mammals include specimens of 11 forms recently described as being new to science by Mr. Austin Roberts of the Transvaal Museum. Another important gift received from Mr. Vernay is a collection of 184 mammals, 29 reptiles, 34 fishes, and 500 butterflies obtained by Capt. Beresford Holloway, who accompanied Mr. Vernay on his recent expedition to the Malay Peninsula. This collection comprises many rare species, including a specimen of the rare *Rhinoceros sondaicus*, which is now being mounted, at the expense of the donor, for exhibition in the Museum. Purchases for the Department of Geology include a specimen of

the teeth of an extinct shark, *Edestus*, from Devonian rocks of Rhenish Prussia. The median teeth of *Edestus*, instead of falling away after use as in all other sharks, remained attached to their successors, forming in the course of time an external dental spiral which must have hung over the point of the jaws and sometimes contained no less than 150 teeth. Prof. G. Vibert Douglas has collected and presented to the Department of Minerals a large series of rocks illustrating the geology and mineralisation of several mines in the 'copper belt' of Northern Rhodesia and Katanga. Samples of volcanic dust which fell after the recent eruptions (April 11-12) in the Andes have been presented by the *Times* Publishing Co. and by Messrs. H. W. Nelson, Ltd.

British Science Guild

AT the annual meeting of the British Science Guild held on May 25, Sir Samuel Hoare was re-elected president for the ensuing year, and affirmed his faith in the aims of the Guild. The annual report shows a year of useful work. Perhaps its most interesting feature is the attempt which the Guild is making, in conjunction with the Association of Scientific Workers, to provide an adequate channel for bringing before Parliament the views of scientific men. A Science Advisory Council is being set up, and it is intended that this Council shall be in some sense comparable with the Federation of British Industries, in the sense that it shall be the liaison body for providing contact with Parliament in connexion with scientific and technical matters coming before the House. The success of the projected Council will, of course, depend on the degree in which it enjoys the co-operation of scientific and technical societies, a number of which have already agreed to participate. The extent of its activities, however, will be mainly determined by that of the funds placed at its disposal, and in this aspect the matter has yet to be put on a satisfactory basis.

Research and Industry

IN a recent article in the *Journal of the Textile Institute*, on "Cotton Research and Academic Physics", Dr. F. T. Peirce points out that the tendency of men of science to get into ruts of thought is partly responsible for the tardiness of the academic mind to appreciate and interpret the problems of technology in a way that is essential for the interpenetration of science and industry. On the other hand, while as one consequence of specialisation every research worker is accustomed in his reading to slur over matter which he cannot or need not understand, the industrialist is apt to be offended if he encounters matter which is incomprehensible to him even though the practical conclusions are clear. Without claiming that scientific research is a complete cure for all the troubles of industry, Dr. Peirce urges that it is a method of securing the most effective use of available resources, and shows how, within the experience of the cotton industry, impersonal scientific methods have succeeded in saving efforts and resolving difficulties in the relations of firms or branches of the industry with