

at Cambridge, Massachusetts, was celebrated as an outstanding event in the history of knowledge by a great gathering representative of all branches of learning and drawn from all parts of the world. A tribute of a different character came from six of the industrial leaders of the United States, in the form of a letter to President Conant directing attention to the indebtedness of American industry to the universities. They pointed to the large and increasing number of university trained men in industry and business as evidence of the influence of university education on industrial progress, and stated that, having caught the spirit of research from the universities, industry has applied its methods successfully and with noteworthy results. During the past twenty-five years, the number of industrial research laboratories in the United States has grown from a handful to more than 1500, and is rapidly increasing. "From the universities also flows much of the basic knowledge of science on which modern technical industry has built and will build in the future." The letter is signed by Walter S. Gifford, president of the American Telephone and Telegraph Company; Alfred P. Sloan, jun., president of the General Motors Corporation; Thomas G. Watson, president of the International Business Machines Corporation; Pierre S. du Pont, chairman of the board of E. I. du Pont de Nemours and Company; Owen D. Young, chairman of the board of the General Electric Company; and Walter C. Teagle, president of the Standard Oil Company of New Jersey. It is a striking tribute to the significance of university institutions in industrial progress.

African Problems

A WIDE and varied field was covered in the discussions which engaged the attention of the twenty-third biennial session of the International Colonial Institute held in London on October 6-8. As Mr. Ormsby-Gore pointed out in a speech at the banquet at which the delegates were entertained by the British Government, the Colonial Powers are all confronted with a number of problems, human, political and social, which have to be studied objectively in common. To this end the mere interchange of views and experience is useful, even though no very decisive conclusion may appear to emerge. In this respect, the pooling of experience and discussion of methods of meeting the new problems raised by the introduction of newspapers, broadcasting and the cinema are highly instructive. This, too, is perhaps the most beneficial outcome it is legitimate to expect from the discussion of the detribalized native, which was opened by Lord Lugard and occupied a considerable part of the session. It was evident, as might have been anticipated, that measures applicable to one area may not be possible in another. Thus the conclusion put forward by Father Charles, that tribalism can be revived successfully only under rule on tribal lines and by the use of native courts, may be accepted as a general proposition. Clearly, however, it cannot meet transitional cases, such as those to which Mr. Ormsby-Gore referred, when he spoke of the product

emerging under missionary influence, for example, in the towns of the west coast, which it is difficult to fit into the evolution and progress of tribal life and the social organism. On the other hand, Prof. Basil Williams, while expressing approval of the system in the Belgian Congo, under which the mine-workers are encouraged to bring their wives, admitted that it has been impressed upon him that such a system would not be practical on the Rand, where mine-workers number a quarter of a million.

Natural Resources Conservation

ONE of the important questions discussed at the recent World Power Conference was the conservation of natural resources. Science Service, of Washington, D.C., has issued reports of papers, dealing with this subject, which formed the basis of a discussion at the Conference. It is stated that whether the business systems are capitalist or socialist or a combination of the two, we must organize our activities to meet the demands of natural law, and all civilized nations are struggling towards this end each in its own way. The principles laid down for 'resource planning' by the writer of the reports are to keep soil, water, forest and grass as at present, but to economize by every possible means in the use of irreplaceable minerals. Nature lays down the terms, and we must either obey or suffer. We can come to terms with Nature in regard to the self-renewing resources by using them only as fast as they are replaced. With regard to the non-replaceable minerals, we can come to terms only by finding new and abundant substitutes faster than we use up the older materials. It is a race between technology and waste. Face to face with the inexorable demands of Nature, we suffer from human weakness. The consent of the people has to be obtained in spite of the propaganda issued by those whose interests are opposed to the public welfare. The laws of a federal union of sovereign States are a tangle of inconsistent rights and powers that hampers the action of the nation. The United States are now struggling to acquire legal and political powers commensurate with their necessities. If it fails, we are threatened by a crisis when essential materials are exhausted and it becomes necessary to reduce the population.

British Chemical Manufacturers

REPORTING on its activities during the year ended May 31, 1936, the Association of British Chemical Manufacturers justly claims to have rendered substantial assistance to an industry which is one of our most important national assets. It is concerned with the organization of displays of British goods, such as that provided by the British Industries Fair, with legislation and the incidence of taxation, with commercial treaties with foreign countries, with the Ottawa agreements and means for stimulating trade within the Empire, with transport, safety precautions, and in fact with any problem relating to the industry other than questions involving wages, hours and conditions of work. There is, however, much still to be done, and the Association is anxious to realize

that expansion of services which would be rendered possible by an increase in its membership to include every chemical manufacturer in Great Britain. In his speech at the annual general meeting held on October 8, the chairman referred to the successful outcome of many of the enterprises which the Association has undertaken in the interests of its members, including in his survey a reference to the measures which are being undertaken to protect our factories against air attacks in the unfortunate event of war. The Association has also participated in investigations concerning the detection of toxic gases in industry. It is announced that the first pamphlet of the series, that dealing with hydrogen sulphide, will shortly be published by the Department of Scientific and Industrial Research. Dr. E. F. Armstrong was re-elected president for the coming year.

The Velocity of Light

FROM time to time, Mr. M. E. J. Gheury de Bray has published in the columns of NATURE communications on this subject. He has now brought together the results of his investigations in an article published in *Isis* (25, 2; September 1936), entitled "The Velocity of Light: History of its Determination from 1849 to 1933". Reprints of the article have been prepared and can be obtained from Mr. Gheury de Bray, Imperial Patent Service, First Avenue House, High Holborn, W.C.1 (price 1s.).

Pavlov Institute of Aviation Medicine

As successful flying over long distances or to high altitudes depends not only on the efficiency of the aeroplane and the skill of the pilot but also to some extent on such minor details as the clothing and diet of the pilot, the structure of the cabin, etc., an Institute of Aviation Medicine dedicated to Prof. I. P. Pavlov was organized about a year ago in Soviet Russia. The laboratories of the Institute make tests of clothing, oxygen apparatus and anti-noise helmets, and study the problem of producing light, warm and comfortable clothing for airmen. Oxygen apparatus used in flights is produced under the direct supervision of the Institute, and the fitness of airmen wishing to ascend to high altitudes is tested in the Institute's barometric chamber.

Early Photographic Instruments

SOME of the earliest instruments in the history of photography have just been acquired by the Science Museum, South Kensington, on loan from the Royal Photographic Society of Great Britain. They include three instruments used by Fox Talbot, the inventor of the first paper photographic process: (1) A camera lucida, the use of which on the shores of Lake Como in 1833 first suggested to him that the invention of a sensitive paper would record such scenes more perfectly than sketches made by hand. This is the instrument mentioned in his "Pencil of Nature", published in 1844. (2) Fox Talbot's solar microscope, with which the earliest photomicrographs on paper

were produced. (3) A Culpepper type microscope, c. 1820. With other instruments and specimens which have recently been acquired and are in course of classification prior to exhibition, the representation of Fox Talbot's work in photography bids fair to be complete.

"Annual Tables of Constants and Numerical Data"

THE publication of the "Annual Tables" having lagged behind schedule since vol. 10 (1930), the new managing committee (Institut de Chemie, 11 Rue Pierre Curie, Paris, 5^e) proposes to make up for it by publishing the data for 1931-36 in a more condensed form and more critically edited, in separate fascicules by subjects, partly separately for 1931-34 and 1935-36 and partly for the whole period 1931-36. The set of these fascicules will form vols. 11 and 12 of the "Annual Tables". This programme is to be completed in 1937: the numerical material published in the "Annual Tables" will then be brought up to date. In addition, an index volume by substances for vols. 6-10 (1923-30), like that published for vols. 1-5 (1910-22), is to appear towards the end of this year. A new index volume by substances will be prepared for vols. 11 and 12, to be published in 1937. The Committee would welcome inquiries about the "Tables", and state that the back numbers have now been greatly reduced in price. The new fascicules are being issued at a very modest price, which will place them at the disposal of all scientific workers likely to need them in their investigations. The preparation of the "Annual Tables", which is a purely scientific and non-profit-making undertaking, is a worthy task deserving the active support of men of science in securing their prompt publication.

Dr. A. H. Mackenzie

IN announcing the death of Dr. A. H. Mackenzie, in NATURE of October 10, he was described, following "Who's Who", as "Pro-Vice-Chancellor of the Osmania University, Hyderabad". Prof. M. S. Ahmed writes to say that the correct official title is "Pro-Vice-Chancellor of and Special Propagandist for the Osmania University of Hyderabad". He adds: "Dr. Mackenzie was appointed to the position of Pro-Vice-Chancellor of the Osmania University in which capacity he had to work six months in the year at Hyderabad, and the remaining six months he had to spend in Great Britain in doing special propaganda in the British Universities on behalf of the Osmania University".

A Nova in Sagittarius

THE discovery of a nova on October 6 (the third to be discovered since last June) has been announced by telegram from the International Astronomical Union's Bureau at Copenhagen. The position is given as R.A. 18^h 4.5^m; Dec. 34° 21' south: magnitude 6 on Oct. 6^d 0^h U.T. This position places the nova in the constellation of Sagittarius and roughly midway between the 3rd magnitude stars, γ Sagittarii and η Sagittarii. The discoverer is Mr. C. Jackson,