

the first X-ray photograph of the human thorax in a living subject (1899; later frequently improved), and the first successful attempt at X-ray cinematography of the movements of the human stomach (1909). Jointly with Rieder, Rosenthal was editor of the first "Lehrbuch der Röntgenkunde" (first edition, 1913; second edition 1924).

In later years, Rosenthal took an active interest in the development of the Deutsches Museum in Munich, especially in its Department of Radiology, an activity which found its official recognition on the occasion of the laying of the foundation stone of the new Museum, in 1928, when he was awarded the "Goldene Ring" of the Museum. A popular lecture, given in the Museum, entitled "Das Jahrhundert der Strahlen", appeared as a pamphlet in 1930.

WE regret to announce the following deaths

Sir Henry Fowler, K.B.E., formerly chief mechanical engineer of the London, Midland and Scottish Railway, on October 16, aged sixty-eight years.

Dr. Willis R. Gregg, chief of the United States Weather Bureau, known for his work in aeronautical meteorology, on September 14, aged fifty-eight years.

Dr. Thomas C. Hebb, professor of physics in the University of British Columbia, on August 13, aged fifty-nine years.

Prof. Maurice d'Ocagne, 'free member' of the Paris Academy of Sciences, known for his work on the application of geometrical methods to the calculus, and author of the "Traité de Nomographie" (1919), on September 23, aged seventy-six years.

News and Views

Sir Daniel Hall K.C.B., F.R.S.

THE impending retirement of Sir Daniel Hall from the directorship of the John Innes Horticultural Institution will presumably close his very long connexion with agricultural administration and research. From the time when he was the first principal of the South-Eastern Agricultural College, Wye, and throughout his directorship of the Rothamsted Experimental Station, his tenure of office as principal scientific adviser to the Ministry of Agriculture and Fisheries, and lately as director of the John Innes Institution, Sir Daniel has impressed all by his knowledge, his sound judgment and tact, and not least by his great ability as a writer and speaker. Like the late Lord Ernle, and his successor at Rothamsted, Sir Daniel excels in the art of exposition, and British scientific agriculture has indeed been fortunate in commanding the services of men of this type. Now that he has passed the stage when, in the pursuit of duty, it is no longer necessary to "rise earlier than virtue and go to bed later than vice", we hope that Sir Daniel will find occasion to continue his great interest in the social contacts of science; but no one will grudge him time to devote to oriental art and other "digressions of a man of science". Science needs men like him who can write and speak, as well as think and do, in order that its voice may be heard amidst the disharmonies of a world torn by political turmoil and social strife.

International Study of African Problems

THE Volta Foundation Congress, which met in Rome at the beginning of October under the auspices of the Italian Royal Academy for the discussion of questions relating to Africa, was attended by delegates from fourteen European countries, including representatives of Great Britain and Germany. The delegates appear from the reports of the proceedings to have appreciated to the full both the joint responsibility of the nations of Europe for the future

development of Africa, which was stressed by Prof. Orestano in his address at the opening of the Congress, and the desirability of international co-operation on a broad basis in the study of conditions which is a necessary preliminary in the approach to the problems, upon the solution of which advancement of Africa and her peoples must depend. Among the topics discussed on these lines were such matters as tropical diseases, native education, European settlement, anthropological studies, communications, and the like. In view of the attitude of the delegates on these matters, it is not surprising that in the final session strong expression was given to the opinion that some permanent organization should be formed for the promotion of international co-operation in further inquiry; while it was also urged that nations other than those at present interested directly in Africa, should be invited to participate in the interests of civilization at large. While any proposal is welcome which aims at promoting study of the problems of Africa as a whole, and seeks to attract collaboration from as wide a field as possible, it may not be out of place to recall that there are already in existence international organizations, which in certain fields are doing excellent work, and are capable of ready extension, were funds available. It would, however, be premature to offer comment before the present proposal takes more definite shape.

Boundaries for University Teachers

ANY action which affects the positions of members of scientific staffs of universities or similar institutions concerned with the promotion of natural knowledge, or restricts fields of research, or is in conflict with the spirit of internationalism in science, commands the attention of scientific workers everywhere. It is on this account, and as an indication of the restrictions imposed upon the movements of university teachers by State authority, that we print the following

translation of a decree issued for information and action in August last in Vienna by the Ministry for International and Cultural Affairs :

"Invitations to positions in foreign countries issued to Austrian university teachers who are non-Aryan, married to a non-Aryan or politically unreliable.

To the Rectors of the Austrian universities and to the Dean of the Theological Faculty in Salzburg, also to the Academies of Fine Arts and to the Rector of the World Trade College.

At the instance of the Minister of Education, the attention of the Rectors and Dean is drawn to the fact that the decree of April 23rd, 1938, Zl. 12822, forbidding all university teachers to negotiate about a call to a university outside the German Empire without previously obtaining the consent of the Ministry of Education, applies also to university teachers who have retired and to others who for other reasons have ceased to occupy their positions.

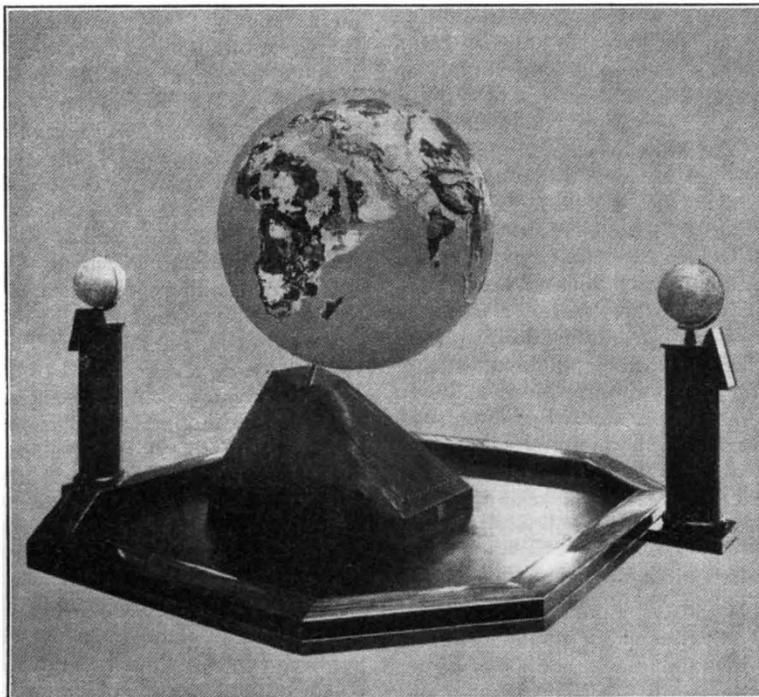
Should the Rectors or Dean learn of an Austrian university teacher, retired or dismissed, who is non-Aryan, married to a non-Aryan or politically unreliable, who is trying to obtain a call to a foreign university or already preparing to occupy such a position, they must report the case here at once.—The State Commissar : Plattner."

A Geological Globe

A TERRESTRIAL globe, believed to be the largest yet prepared to show both orographical detail and the distribution of the main geological formations, was formally installed in the Geological Museum at South Kensington on October 10 by Sir Frank Smith, secretary of the Department of Scientific and Industrial Research. The globe was modelled by Mr. C. d'O. Pilkington Jackson, of Edinburgh, from data compiled by Mr. D. L. Linton. It consists of a sphere of fibrous plaster, 5 ft. 11 in. in diameter, strengthened internally by steel stays arranged around a steel tube which forms an axis from pole to pole and is tilted at $23\frac{1}{2}^{\circ}$ from the vertical. The globe is supported by a steel spindle which is electrically rotated at a rate of one revolution in $2\frac{1}{2}$ minutes. The linear scale is approximately 1 : 7,000,000, and

relief is exaggerated twenty times. The geological colouring has been carried out in the Museum by Mr. C. Keefe under the direction of Mr. A. J. Butler. The colour scheme is designed to demonstrate the broad outlines of the geological structure of the continents in a fashion sufficiently simple to appeal to the non-geological visitor, and at the same time to reveal on closer inspection sufficient detail to render the globe of special use to teachers and students of geology and geography. Six distinct colours are used to indicate the sedimentary deposits of the geological eras, and the systems formed during each era are distinguished by graduated shades of

the appropriate colour ; the lightest shade represents the newest system, the darkest represents the oldest. A system of stipples is used to show the age-limits of rock-groups which cannot be divided into systems. Igneous rocks appear in scarlet and orange ; and ice-caps, rivers and lakes are also marked. Provision is made for corrections and additions as new information comes to light. The geological globe bears no lettering or symbols. Two small



GEOLOGICAL GLOBE AT THE GEOLOGICAL MUSEUM, SOUTH KENSINGTON.

physical globes which are mounted near it act as geographical indexes, and a sphere some 19 inches in diameter and 60 yards away demonstrates the relative size and distance of the moon.

Decibels and Phons

WE owe it largely to the public interest in the abatement of noise that two hitherto unfamiliar, but now international, units—the decibel and the phon—have come into common use. The decibel, which arrived from America via the telephone engineer, represents approximately a $\frac{5}{4}$ geometrical increase in acoustical energy or intensity. This forms the basis of a logarithmic scale of energy levels which advance by increments of one decibel, starting from a 'zero' which is arbitrarily fixed near the threshold of hearing. The phon, which was imported from Germany, is the unit of loudness or, more precisely, of 'equivalent loudness'. It is derived through the medium of a pure tone of 1000 cycles per second which is set up as a standard of reference. Where the reference tone is stimulated by an energy level