

It may be pointed out that the toxic amounts of irradiated ergosterol in these experiments contain from 10,000 to 100,000 times what may be called the physiological dose of vitamin D. In healthy adult men, Havard and Hoyle found that 8 mgm. daily for three weeks in winter failed to raise the blood inorganic phosphate or serum calcium and had no toxic effects (*Biochem. J.*, vol. 22, p. 713; 1928). Hess and Lewis, however, found that 2.5-5 mgm. daily in rachitic infants, whilst curing the disease, might lead to an excessive rise in the blood phosphorus and calcium.

In conclusion, brief reference may be made to a paper by Harris and Moore in which it is shown that the requirement of the rat for vitamin B is increased *pro rata* with increase in the intake of vitamins A and D in the form of a cod-liver oil concentrate. The amount of vitamin D consumed was below the level which had previously been found to be toxic (when given in the form of irradiated ergosterol), whilst the amount of vitamin A taken was up to 25,000 times the minimum dose. It is considered that the 'vitamin balance' is probably between vitamins A and B, although the possible action of other unidentified substances cannot be excluded when both sources of the vitamins contain other materials.

University and Educational Intelligence.

APPLICATIONS are invited for the following research scholarships at the Huddersfield Technical College: The Joseph Blamire's Research Scholarship for research in colour chemistry (value £100 a year, with remission of fees), and the British Dyes Research Scholarship for research in colour chemistry (value £75 a year, with remission of fees). Forms of application can be had from the Secretary of the College.

ROBERT BLAIR fellowships have been awarded to Mr. Cyril H. Bowden and to Mr. Philip Carpenter. These fellowships, which carry a grant of £450, are the most valuable scholarship awards in the gift of the London County Council. Mr. Bowden has been engaged upon research work in the physical chemistry department of the Imperial College of Science, and proposes to study chemical engineering at the Massachusetts Institute of Technology, U.S.A. Mr. Carpenter, who is an associate of the Royal School of Mines, proposes to visit mines in the United States to study the principles and practice of the flotation process for separating minerals from their ores, with a view to the value of its application on the large copper field now being opened up in Northern Rhodesia.

FROM the University of Cambridge we have received summaries of dissertations approved for the Ph.D., M.Sc., and M.Litt. degrees during 1928-29, as follows: in science 44, in the humanities 12, total 56. By departments the dissertations are thus distributed: departments of the faculties of biology 22 (biochemistry 6, geology 6, botany 4, zoology 3, physiology 3), chemistry 9, agriculture 6, mathematics 4, physics 3, English 4, classics 3, modern and mediæval languages 2, economics and political science 1, history 1, moral science 1. The preponderance of science, especially biological science, is remarkable. So likewise is the fact that of the 56 candidates 34 were drawn from other universities in every quarter of the globe, namely, from London (4), Wales (4), Manchester (2), Sheffield, St. Andrews, Glasgow, Aberdeen, Berlin (moral science) Lausanne (mathematics), Budapest (biochemistry), Pisa (chemistry), four universities in the United States of America (English, modern and mediæval languages, chemistry, and physiology), two Canadian universities (history and agriculture), four Australian universities

(botany, geology, biochemistry, English, chemistry), New Zealand (botany, geology, physics), South Africa (chemistry), and Bombay (zoology).

IF the number of doctorates conferred in the sciences be proportionate to the advance of the frontiers of knowledge, there has been a notable acceleration in the progress of science in the United States during the past ten years. 1928-29 is the tenth year for which particulars of such doctorates have been compiled by the Research Information Service of the American National Research Council, and its recently published bulletin on the subject shows a steady increase from 330 in 1919-20 to 1025 in 1928-29. The University of Chicago alone created 99 new doctors last year, Wisconsin 66, Johns Hopkins 62, Columbia 61, Cornell 60, Minnesota 53, California 50, Ohio State 48, Yale 47, Harvard 40, fifty-one other universities 439. Of greater interest than the list of conferring universities is the list of subjects in which the degrees were conferred. This discloses the portentous fact that, excluding chemistry, which is in a class by itself, accounting for nearly a third of the total number, more doctorates (112) were conferred in what has only barely established its claim to recognition as a science, namely, psychology, than in any of the other sciences. The universities chiefly responsible are: Iowa (15), Ohio (13), Chicago (10), Columbia (9), Cornell (9), Minnesota (8), Wisconsin (6), and Yale (6). The titles of the theses indicate in many instances the schools of psychological doctrine in which the writers are interested, and a very large proportion of them are attempts to solve practical educational problems. Next to psychology come, in the order given, physics, zoology, botany, mathematics, geology, physiology, engineering, pathology, agriculture, and bacteriology.

THE report of the work of the Petroleum Department of the Sir John Cass Technical Institute for the session 1929-30 is now available, and shows that satisfactory progress has been made in all sections. The close of the session to which the report relates marks the completion of the third triennium of the activities of the department. The courses provided embrace lectures on general technology of petroleum, bulk transport and distribution of petroleum products, introduction to the chemical and physical properties of petroleum; properties, applications, and examination of petroleum, and its applications to engineering. There is also a preliminary course in elementary physics, chemistry, and mathematics, as a basis of introduction to the subject of oil technology for those who have little or no knowledge of first principles. The total number of class entries for the session was 160 as compared with 145 last session, student hours showing an increase from 2153 to 2876. The report, as in previous years, gives no indication of the syllabus of the lectures offered, so that it is not possible to form an idea of the precise ground traversed in the several courses. While a report is naturally not intended to constitute in itself a prospectus, at the same time these annual reports of the Petroleum Department of the Institute have always seemed to us rather bald statements, and the inclusion of a little more internal detail is desirable; for example, the names of all the lecturers who have contributed to the work, results of any particular research which may have been inspired by the Institute, some mention of the companies whose representatives have attended courses, any particular departures from or modifications in routine designed to keep the curriculum up-to-date, plans for the future, and so on: all this is of direct import not only to the School itself, but also to those for whom it so adequately caters.