vitamin passing into the portion soluble in 99 per cent ethyl alcohol. The authors failed to get consistently successful results with a silver fractionation, but were more successful with the use of phosphotungstic acid and platinic chloride. The most active preparations contained a day dose in 0·027 mgm., but more lately some have been obtained with a curative activity of 0·01 mgm. a day dose.

Guha and Drummond (*loc. cit.*) prepared active concentrates from wheat embryo. After extraction by means of acid alcohol, two different methods of concentration were employed: in the first, impurities were precipitated by lead acetate, and the activity adsorbed on norite charcoal at *p*H 4·5 and eleuted with acid alcohol: it was then precipitated by phosphotungstic acid, adsorbed on silver oxide, and the product fractionated with alcohol. Picrolonic acid then precipitated impurities from the material, which was soluble in alcohol. The first product had a pigeon day dose of 0·043 mgm. In the second method, Jansen and Donath's process was followed, namely, adsorption on fuller's earth at *p*H 4·5 and eleution with baryta, and fractionation with silver nitrate and baryta followed by precipitation with phosphotungstic acid. The product was then submitted to precipitation with platinic chloride, followed by gold chloride; at the last stage most of the activity passed into the precipitate, but it was observed that smaller doses of both precipitate and filtrate together restored growth in the rat or cured the pigeon than of either when given separately, suggesting that vitamin B_1 may itself be composed of more than one factor. The smallest pigeon day dose was 0·0025 mgm., and 0·015 mgm. promoted good growth in rats. These figures indicate that the preparations were more active than the crystals obtained by Jansen and Donath.

Although formulæ have been assigned to vitamin B_1 preparations, it does not appear that a pure substance has yet been isolated. A certain amount is, however, known about its properties. It appears to be a tertiary base: it is soluble in water and alcohol, but is unstable in the latter solvent when highly purified: it is insoluble in the other common organic solvents. It is destroyed by alkali, but is stable to oxidising and reducing reagents and to nitrous acid. Cruder preparations give a definite Pauly reaction, but as purification proceeds the reaction becomes very weak. Sulphur is absent, and the purer preparations do not give the xanthoproteic, purine, or Millon's reactions. In extracts from rice polishings, after treatment with lead acetate and concentration of the filtrate, vitamin B_1 is destroyed by fermentation and by heating to 95°, and is removed by filtration through a Berkefeld filter (J. L. Rosedale and C. J. Oliveiro, *Biochem. Jour.*, vol. 22, p. 1362; 1928), although it will dialyse through cellophane.

The isolation from contentrates of supposedly pure substances and the fact that false positives may be given by the pigeon test have led to claims that different pure compounds are the vitamin. J. M. Gulland and Peters (*ibid.*, vol. 23, p. 1122; 1929) have examined the claims that certain quinoline and glyoxaline derivatives have curative properties. Without exception all those examined, including 4 (or 5) glyoxaline methylethyl carbinol hydrochloride and 2:6-dihydroxyquinoline, were quite inactive when tested on pigeons by Peters' technique.

The Adler Planetarium of Chicago.

THE Adler Planetarium is a new and striking feature on the shore between a small lagoon and Lake Michigan. In plan it is dodecagonal: the walls are faced with large slabs of red granite and it is surmounted by a dome. The principal object of this new institution is explained on the dedication plaque that confronts the visitor when he crosses the threshold of the entrance lobby. Eight sculptured figures by Vannelli, symbolising the eight principal planets, are disposed around a circular disc representing the sun, upon which is set the inscription: "*The Astronomical Museum and Planetarium of Chicago—Gift of Max Adler—To further the Progress of Science—To guide to an Understanding of the Majesty of the Heavens—To emphasise that under the Great Celestial Firmament there is Order, Interdependence and Unity—1930.*"

For this purpose the principal instrument is a large projection apparatus built by the firm of Zeiss on lines similar to those of the one described in NATURE for Dec. 27, 1924, p. 937, and by which large audiences can watch the movements of the starry firmament as projected upon the inside of the great dome of 68 feet in diameter. On the north and south sides of the dome are two spacious exhibition halls, while to the east of it are library, lecture- and work-rooms, and also the office of the director, Dr. Philip Fox.

The Adler Planetarium is, however, designed on broader lines than those of a public hall for planetary demonstrations. It includes a collection of important historical instruments used by astronomers in past centuries. Among the more modern instruments are one of Sir William Herschel's reflecting telescopes, given by Sir Frank Dyson with the authorisation of the British Admiralty; Burnham's 6-inch telescope, loaned by the University of Wisconsin, with various mementoes of him; Nichol's star heat radiometer from the Yerkes Observatory; refractors loaned by Carl Zeiss and by Richard E. Schmidt; a large model of an observatory with movable dome, telescope, and floor, based on the U.S. Naval Observatory. An appropriate exhibit is an orrery by Isenbroeck, of 1737; while in wall-cases are displayed that important series of instruments of earlier date, known as the Mensing Collection, which was purchased *en bloc* in January last by Mr. Adler from the firm of Messrs. Frederik Muller and Co., of Amsterdam.

While keenly regretting the loss to Europe of so many astrolabes, armillary spheres, sundials,

early telescopes, sextants, and surveying instruments—all most interesting relics of the past—it is well that the great country of America, where science is relatively so new, should have some material record of the tools by which astronomical knowledge has been painfully won, and taught, in the Old World. Thanks to the generosity of yet another recruit to the ranks of noble benefactors who have given the United States its greatest institutions, Chicago now takes the lead among American cities equipped for the study of the instruments of ancient astronomers. Thanks to Dr. Adler, within a few months the city has acquired historical riches surpassed only by the famous collections of European cities, such as Munich, Dresden, Paris, London, and the Lewis Evans Collection at Oxford. The selection has been ably made and arranged by Mr. Adler's lieutenant, Dr. Fox, and the instruments will be on view at the Chicago Centenary Exhibition this year, with the planetarium as the most considerable side-show. We require benefactors like Mr. Adler in Great Britain.

Obituary.

SIR OTTO BEIT, K.C.M.G., F.R.S.

DURING the last fifty years, and more especially in the last twenty-five, much has been done in Great Britain to promote the advancement of the science of medicine, by providing facilities for the furtherance of research, both by the development of laboratories of high efficiency and also by the foundation of research fellowships to enable investigators of promise to pursue their work. Many generous benefactors have taken a part in this work; some have built institutions or laboratories, others have endowed professorships, and others have founded research fellowships.

Amongst those who have devoted their benefactions to the foundation of fellowships, the name of Sir Otto Beit will always be honoured, not merely, or even mainly, for the magnitude of his foundation, which amounted to nearly a quarter of a million sterling, but rather for the breadth of view that determined the scope of the scheme that was founded as a memorial by him to his brother, the late Mr. Alfred Beit. Mr. Alfred Beit had taken a considerable interest in certain proposals that had been made in the early years of the present century for improving the teaching of the earlier subjects of the medical curriculum of the University of London, and had made a gift of £25,000 towards this object and bequeathed a further like sum for the same purpose. The scheme failed to secure the necessary support of those concerned, and, consequently, the gift and the legacy ultimately lapsed, and reverted to the residuary legatee, Sir Otto Beit. He decided to use the money to establish a memorial to his brother, to whom he was devotedly attached; and after consultation with, and advice from, Sir James Kingston Fowler, the late Prof. Starling, and others, the scheme was promulgated in December 1909 as a "Memorial to his brother, Mr. Alfred Beit, to promote the advancement by research of Medicine, and the Allied Sciences in their relation to Medicine".

Although the scheme was originally drafted on the basis of the provision of a capital sum of £25,000 and the foundation of three fellowships, it transpired that Sir Otto had increased the benefaction tenfold, and one, at any rate, of his advisers only learnt this by telephone from him, twenty-four hours before the announcement was made publicly. This act exemplifies not only the great generosity of the donor, but also the decision with which he acted when he considered the proposals put before him were such as to deserve support.

Although the Foundation is justly remarkable for its magnitude, it is more especially to be commended for its scope. Many benefactors would have desired to impose limitations; some would have failed to realise that medicine can be furthered in any other way than by research directed to some immediate so-called practical object, for example, the eradication of some individual disease. Not so in the case of Sir Otto Beit; and hence the inclusion in the scheme of the "Allied Sciences in their relation to Medicine". He was well aware of the close and intimate connexion of many sciences, not only with the science of medicine, but also with the practice of the art of medicine.

The actual scheme of administration of the Foundation was modelled on that adopted by one of the City companies, namely, the Worshipful Company of Grocers, in its scheme for the award of the well-known Grocer Research Scholarships in Sanitary Science. This City company in the early 'eighties established three scholarships for the promotion of research into the nature and prevention of disease, and always allowed its scientific advisory committee a wide discretion in interpreting the relation of the proposed research to the actual practice of medicine; and many Grocer scholars have made notable additions to knowledge in physiology and in pathology as well as in pure medicine, and thus medicine has been assisted both directly and indirectly. This same policy has characterised the awards of the Beit Fellowships; and the record of the discoveries of the Beit fellows in the course of the last thirty years is one of which any Foundation might be justly proud. Sir Otto Beit, as chairman of the Beit Trustees, took a personal and active interest in the work of the fellows, and was remarkably conversant with their work, as throughout his life he took a lively interest in the progress of medical knowledge.

In November 1928 he made another very notable benefaction to medical science, by giving King Edward's Hospital Fund £50,000 for the purchase of radium for the benefit of London hospitals; and shortly before his death he gave a further £8000, required by King Edward's Hospital Fund to complete the purchase of a further quantity of radium. Here again the value of the gift was greatly increased by the wise foresight of the donor. Many donors would have been satisfied by merely providing radium for the relief of suffering, but Sir Otto Beit went much further by saying that he "should