

Synthetic Quartz Crystals

THE Western Electric Company and the Bell Telephone Laboratories in New York have jointly succeeded in growing large crystals of artificial quartz by a process which they hope to develop on a technical scale. It has long been known that small quartz crystals can be developed in silicate solutions by suitable treatment, but in the new process crystals up to 5-6 in. long and 2-3 in. cross-section have been obtained. The method consists in filling a vertical autoclave with an alkaline solution, usually of sodium hydroxide. Small pieces of natural quartz are placed in the bottom to serve as material and high-quality sand will, it is expected, be used in future. Seed plates cut from natural or artificial quartz crystals are hung from a rack in the upper part of the vessel. After sealing, the autoclave is heated to the required temperature and maintained with a constant temperature differential from bottom to top during the processing time, which has varied from a week to several weeks. Growth occurs primarily in one dimension and flat plates are used, which become thicker but change little in other dimensions. The nutrient material dissolves in the hotter lower region and is carried by convection currents to the cooler upper region, where the solution becomes supersaturated and the dissolved silica is deposited in the form of a single crystal. The combination of conditions of high temperature and pressure in the autoclave is severe and the effective sealing of the autoclave has presented a number of problems in the selection of material and design. The crystals produced have no foreign inclusions, can be obtained without optical or electrical twinning, and can be sawn in the most efficient manner.

The Night Sky in February

NEW moon occurs on Feb. 7d. 19h. 22m. U.T., and full moon on Feb. 23d. 08h. 54m. The following conjunctions with the Moon take place: Feb. 2d. 01h., Jupiter 3° S.; Feb. 4d. 12h., Saturn 4° S.; Feb. 16h. 05m., Mars 6° N. Mercury is too close to the Sun for observation. Venus is an evening star, visible in the south-west after sunset. It sets at 18h. 30m., 19h. 10m. and 19h. 55m. on February 1, 15 and 28, respectively; its stellar magnitude is -3.3. Its distance decreases during the month from 146 to 137 million miles, and the visible portion of the apparent disk decreases from 0.945 to 0.900. Mars is moving eastwards among the stars and is in Taurus during February. It sets at 2h. 45m., 2h. 25m. and 2h. 05m. at the beginning, middle and end of the month, respectively. Its stellar magnitude decreases from +0.3 to +0.8, its distance from the Earth increasing from 94 to 119 million miles. Mars is well placed for observation during the evening. Jupiter rises at 2h. 45m., 2h. 00m. and 1h. 10m. on February 1, 15 and 28, respectively; it is in Libra. The stellar magnitude of Jupiter is -1.6; conditions for observation are not very favourable. Saturn is a morning star in Sagittarius, rising at 5h. 35m., 4h. 45m. and 3h. 55m. at the beginning, middle and end of the month, respectively. It is unfavourably placed for observation. Occultations of stars brighter than magnitude 6 are as follows, observations being made at Greenwich: Feb. 17d. 21h. 43.6m., 115 Tau. (*D*); Feb. 18d. 18h. 20.9m., 124 *H*¹ Ori. (*D*); Feb. 20d. 0h. 23.0m., λ Gem. (*D*); Feb. 21d. 19h. 14.2m., α Cnc. (*D*). *D* refers to disappearance.

Announcements

SIR JOHN COCKCROFT has accepted the invitation of his fellow Trustees of the future Churchill College, Cambridge, to become its first Master. Future Masters of the College will be appointed by the Crown on the advice of the Prime Minister.

LIFE peerages (baronies) have been conferred on the following: Sir Eric James, high master of Manchester Grammar School; Sir Edwin Plowden, chairman of the United Kingdom Atomic Energy Authority; Prof. Lionel Robbins, professor of economics in the University of London; and Sir Hartley Shawcross, the distinguished lawyer.

PROF. R. G. BASKETT has been appointed director of the National Institute for Research in Dairying, University of Reading, as from August 1, 1959.

DR. T. S. ENGLAND has been appointed head of airborne radar at the Royal Radar Establishment, Malvern, as from January 1.

THE New York Academy of Medicine has awarded its Medal to Dr. Peyton Rous for his contributions to knowledge of neoplastic disease. The Academy has awarded its Plaque to Mr. Montgomery B. Angell, for outstanding service to the New York Academy of Medicine as its legal adviser.

THE first of the new afternoon lectures for sixth-form children from schools in London and the Home Counties were delivered at the Royal Institution, Albemarle Street, London, W.1, on January 27 and 28 by Mr. E. Jenkins (Atomic Energy Research Establishment, Harwell), who spoke on "Radioactive Elements". This lecture is to be repeated on February 3 and 4. The programme of lectures for the remainder of the term is as follows: "The Origin of Man", by Prof. J. Z. Young, on February 10, 11, 17 and 18; "The Significance of Colour in Inorganic Chemistry", by Prof. R. S. Nyholm, on February 24 and 25 and March 3 and 4 (sponsored by the Salters' Company); "Electrons in Solids", by Prof. R. King, on March 10, 11, 17 and 18 (sponsored by the Bell Telephone Laboratories).

THE American Society of Mechanical Engineers, in co-operation with Purdue University Thermo-physical Properties Research Center, is organizing a symposium on "The Thermal Properties of Gases, Liquids and Solids", to be held at Purdue University, Lafayette, Indiana, during February 23-26. Further information can be obtained from Prof. R. A. Olsen, School of Mechanical Engineering, Purdue University.

THE Seventh Latin American Congress of Chemistry will be held in Mexico City during March 29-April 3. On the afternoons of April 1 and 2 an international symposium will be held on "Recent Progress in Organic Chemistry". The morning sessions during these two days will be devoted to about twenty shorter papers dealing with steroids and related natural products. Further information can be obtained from Dr. Alberto Sandoval, Instituto de Quimica, Ciudad Universitaria, Mexico 20, D.F.

ERRATUM. Dr. S. Bricteux-Grégoire states that there was a mistake in the manuscript entitled "Utilization of Formate for the Biosynthesis of Glycine Carbon-1 and -2 in *Bombyx mori*", published in *Nature* of November 29, p. 1515. In Table 1, for "C-1, 20,300 and C-2, 43,500", read "C-1, 43,500 and C-2, 20,300".