fibre in the goniometer mounting pin can be brought together by adjusting the **x**, **y** and **z** positions. After a satisfactory position has been obtained, the crystal is backed off, and a small amount of suitable adhesive attached to the glass fibre. The crystal is then brought up to the fibre until contact is made. The apparatus is then left until the adhesive has cured.

Aluminum sheet, $\frac{1}{4}$" thick, was used for the frame. The cost of the device, excluding the goniometer is under US $40.00.

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Crystallographers

Professor Emeritus **E. A. Owen**, Professor of Physics at the University College of North Wales from 1926 to 1954, died recently.

He worked on Röntgen rays and radioactivity under Sir J. J. Thomson at the Cavendish Laboratory before being appointed to the staff of the National Physical Laboratory, where he subsequently became Head of the Radiology Division. In 1926 he was appointed to the Chair of Physics at University College, Bangor, where he established a research school in metal physics, which became internationally recognized for the precision of its X-ray work and its applications to the study of the equilibrium diagrams of metals and alloys.

Notes and News

Announcements and other items of crystallographic interest will be published under this heading at the discretion of the Editorial Board. The notes (in duplicate) should be sent to the Executive Secretary of the International Union of Crystallography (J. N. King, International Union of Crystallography, 13 White Friars, Chester CH1 1NZ, England).

The Walter C. Hamilton Memorial Fund, established under the auspices of Associated Universities, Inc., will be used to provide financial assistance each year to one or more graduate or advanced undergraduate students for work on crystallographic problems at Brookhaven National Laboratory, particularly with neutron diffraction techniques. Students will be selected for these awards on the basis of the scientific merits and feasibility of their research proposals, educational background and experience, and letters of reference. U.S. citizenship is not a requirement. It is expected that each student will spend one to two months at Brookhaven collecting and analysing neutron diffraction data under the guidance of a BNL crystallographer. Computational and other facilities of the Laboratory will be made fully available. The individual stipends, intended to cover travel and housing expenses, will generally be in the range of 300 to 600 dollars. The students selected will be designated as Walter C. Hamilton Scholars.

It is anticipated that the first award will be for the academic year 1974–75. The deadline for applications will be March 1, 1974. Applicants should submit the following material to the Chairman, Chemistry Department, Brookhaven National Laboratory, Upton, NY 11973, U.S.A.

(1) Description of the proposed problem (not to exceed 5 double-spaced pages).
(2) Educational background and experience (which must include some acquaintance with diffraction techniques).
(3) Three letters of reference, including one from the sponsoring professor.

Book Reviews

Works intended for notice in this column should be sent direct to the Book-Review Editor (M. M. Woolfson, Physics Department, University of York, Heslington, York YO1 5DD, England). As far as practicable books will be reviewed in a country different from that of publication.

Laboratory manual on crystal growth. Edited by I. TARJÁN and M. MÁTRAI. Pp. 250, Figs. 128, Tables 12. Budapest: Akadémiai Kiadó, 1972. Price $10.40.

The number of useful text-books available for the crystal grower is small for such an active field, possibly because few workers are sufficiently familiar with all of the possible techniques in use to write authoritatively about them.

Similarly, the theoretical aspects and 'fringe' interests (*e.g.* characterization of crystals) embrace such a wide range of topics – from electrochemistry *via* solid-state theory to sophisticated mathematics – that an all-embracing work is unlikely to emerge. However, some valiant initial attempts have been made to remedy the situation, with, for example, Laudise's *Growth of single crystals*. A second approach is to make a collection of articles by specialists on different subjects as in *The art and science of crystal growth*. This usually results in a patchy volume which lacks continuity, although the example given served a very useful purpose when it was first published. Judging by present trends it seems likely that crystal growers will be inundated with textbooks of this type in the near future.

Completely missing at present from the field is a good practical book which states in clear and simple terms the important aspects of setting up and operating growth equipment. The *Laboratory manual on crystal growth* by Tarján and Mátrai is really the first of this type of book to appear, and should therefore fill a much needed requirement. It is with some regret that one finds that it only does this in a rather half-hearted manner. This may partly be psychological, since the presentation leaves much to be desired by current text-book standards. The quality of the numerous illustrations is poor and the diagrams have a curiously out-of-date appearance that was in vogue in publications of two or more decades ago. On closer inspection the content of the diagrams is as reasonably modern as could be expected.

The treatment also has the indefinable air of slight obsolescence. It is divided for obscure reasons into two main parts, *Basic phenomena* and *Techniques of crystal growth*. Neither section contains any theory whatsoever, but the first section tends to deal with growth principles and describes in adequate detail numerous experiments that are appropriate to students who are taking their first steps in the field. It is a pity that the growth techniques in the second part are not covered in similar detail.

It is difficult to say where the fascination of this book lies, but certainly it has an appeal. The charm of the diagrams such as that on p. 136 in which the seed crystals have a small hat over them for 'protecting them against parasitic seeds' cannot be denied. The odd snippets of valuable information appear and a valiant effort is made to give experimental procedures for growing crystals by a variety of techniques. In all cases it is assumed that the necessary equip-