low-up letters were sent to those who had not replied on March 23, and April 8, 1977 urging that the questionnaires be filled out and returned, or passed to someone in the department who was more active in teaching. At the end of June when returns essentially ceased, there were 236 replies, representing active groups with over 400 faculty and over 800 research students. While no such survey can ever be complete, this would seem to represent the major portions of the actual activities in this field in the universities and colleges in the USA.

The results are presented in Table 1, and an examination of this summary led to the following observations:

(1) The field is particularly weak in the physics community; there are very few groups, and the equipment is poor. Five schools had graduate courses but the laboratory component was minimal. Only two had breadth in their coverage. Crystallography as a discipline is no longer well represented in physics curricula, despite its past history and new horizons. Only eight of the schools contacted were teaching in the area and only three of the eight were adequately equipped. Staff will be required for the new facilities to develop the equipment and theory needed to optimize their use. There is still time for this community to respond to this need.

(2) The ACA might wish to involve the large activity in the materials community more directly.

(3) The broadest scope of education in the field appears to be available in geology and materials departments.

(4) In the biological and chemical fields, despite excellent available equipment in research groups, there is inadequate laboratory work associated with many courses, and the course content is involved primarily with only structure determination. Students need a broader training, especially since most will undoubtedly work in industrial and government laboratories, where they could be much more helpful if they knew about the vast range of possibilities for information from scattering, such as small-angle studies, particle size, powder work, the specific usefulness of electrons and neutrons, surface studies and the new spectroscopies. Certainly part of the training in structure determination could be carried out informally in each research group, while providing a broader scope for the much larger audience in the classroom. (Such broader courses might even increase the class sizes in these fields.) There are too few courses being offered in biology departments.

(5) There is some weakness in the fundamentals taught in the materials community, as the teaching centers around Bragg's law in scalar form, without reciprocal-space concepts. The training involves many applied topics, such as stress measurement, texture, and analysis, which do seem appropriate because many of the students terminate with a bachelor's degree and are employed in production situations. The more advanced courses are in need of updating, and are perhaps too closely tied to available texts.

(6) There is ample room for developing courses that would be broader in scope (and hence probably of greater interest) if university crystallographers would try to develop appropriate interdisciplinary sequences. Formal departments of crystallography are probably not needed, but the lack of interaction that now exists is surprising. Local interactions could result in joint courses or course sequences with a breadth that does more justice to our entire field. Without such activities we force our students into a narrow mold, which will only deepen the separation of the various aspects of our field in the future, as some of the current students move into the teaching profession.

The questionnaires also indicated that there was extensive training in classical crystallography in geology departments, and good coverage of the powder method and its practical uses, as well as elementary fluorescent analysis in geology and materials. There was some quite brief initial exposure to crystallography and diffraction in many courses in general chemistry and physical chemistry.

The author would like to thank Mrs Kay Jensen for her help in organizing this survey. He also wishes to express appreciation to the other members of the committee for advice and comments throughout this project, (Drs J. Bregman, S. Abrahams, M. Mueller, Q. Johnson, D. Dahm and Professor R. Young).

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Crystallographers

This section is intended to be a series of short paragraphs dealing with the activities of crystallographers, such as their changes of position, promotions, assumption of significant new duties, honours, etc. Items for inclusion, subject to the approval of the Editorial Board, 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).

Dr **David R. Davies,** Laboratory of Molecular Biology, National Institutes of Health, Bethesda, Maryland, and Dr **Isabella L. Karle,** US Naval Research Laboratory, Washington,DC, have been elected to the USA National Academy of Sciences.

Professor **P. P. Ewald** received the Max-Planck Medal of the Deutsche Physikalische Gesellschaft on 3 July 1978.

Dr **Thomas Rundell Lomer,** Senior Lecturer and Departmental Tutor in the Department of Physics, University of Birmingham, died suddenly and prematurely on 21 July 1978. He is best known for his studies of metal soaps, but has published also on other aspects of crystallography and biophysics. He is survived by his widow and four children.

Book Review

Works intended for notice in this column should be sent direct to the Book-Review Editor (J. H. Robertson, School of Chemistry, University of Leeds, Leeds LS2 9JT, England). As far as practicable books will be reviewed in a country different from that of publication.

Crystal growth and materials. ECCG1, Zürich, 1976. Edited by *E. Kaldis* and *H. J. Scheel*. Vol. 2 of the series: **Current topics in materials science.** Edited by *E. Kaldis*. Pp. xvi + 916. Amsterdam: North-Holland, 1977. Price $122.50, Dfl. 300.00.

As the title suggests, this book performs two functions. On one hand, it is a collection of the sometimes extended versions of 28 invited papers which were presented