[diameter 152(5) μm] spheres of single-crystal ruby, all ground from the same initial raw material source and available for each crystallographer to use as a well characterised reference standard, in his or her own laboratory.

One of the unforgettable events of the Congress was its Opening Ceremony. We shall remember the huge Arts Centre, its cavernous interior studded with 1000 lights; an audience of nearly 2000; the statesmanlike address, *avec parties d'importance en Français*, given given by the NRC President, Dr Larkin Kerwin, emphasising that what we need today is not so much a policy for science but rather, science within our policies; and the Canadian songs, both English and French, sung by the very professional Cantata Singers of Ottawa. Further, we shall remember the fascinating discourse, 'Insulin in Crystals', delivered by Professor Dorothy Hodgkin and, most unforgettable of all, those dramatic moments when, alas, under the heat of the fierce illumination that the projectionists were using, some of her slides jammed and even melted (yes, while projected on to the immense 40 ft screen, one of them liquefied in full view of the audience!), a pitiful indignity, which was borne by Dorothy with all her inimitable good humour and charm. Finally, we shall also recall the special message, formally read out by President Kato, that had been received from that father-figure of modern crystallography, Professor P. P. Ewald, who now (at 93) was just a little too immobile to be able to attend the meeting in person. Ewald, who was himself a key figure in the founding of our International Union, and was the first Editor of *Acta Crystallographica*, added to his good wishes the reflection that 'only through world-wide peaceful cooperation is a thorough understanding of our science to be achieved'.

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Commercial exhibits and data base displays at the XIIth Congress and General Assembly of the International Union of Crystallography

Scientists attending the XIIth IUCr Congress in Ottawa had a unique opportunity to examine and compare some of the latest, most powerful diffraction instrumentation available to them from commercial manufacturers. They could also evaluate the scope and utility of four structural data bases by hands-on demonstrations *via* computer links that in one case spanned the Atlantic. The site of most of these displays was an ample 4700 square-meter area in the main hall and foyer of the Carleton University Centre – a well-marked stop on the walking route from the Commons Building to the several lecture rooms and poster areas used by the Congress.

The Cambridge Instruments Canada Inc./Enraf–Nonius, Nicolet/Syntex, and Siemens AG exhibits each featured fully automated single-crystal diffractometers with complete, tested software packages. The Rigaku Corporation had brochures available describing a similar system. Nicolet, Rigaku and Siemens also offered associated sets of structure-determination and refinement programs that could be run with the same dedicated computer used for diffractometer control and data collection. The Nicolet system, with programs based on *SHELX* (Sheldrick, 1976), was in operation at the exhibit and could be used by visitors with appropriate input data. Huber Diffraktionstechnik GmbH displayed a single-crystal diffractometer suitable for automation; their representatives had additional information on hand that described the larger instruments currently being adapted for synchrotron-radiation experiments.

Versatile automated powder X-ray diffractometers were highlights of the Philips, Stoe/California Scientific Systems, Rigaku and International Business Machines displays. Several systems offered sophisticated software packages for profile analysis and/or phase identification *via* programmed searches of standard pattern files. Elaborations of one such set of programs were presented by IBM scientists at a poster session (Parrish & Huang, 1981; Huang, Ayers & Parrish, 1981). This simple method of augmenting and advertising commercial exhibits might well be emulated by others at future meetings.

Newly developed instruments in the field of position-sensitive X-ray detectors were shown by Marconi-Avionics, Stoe/CSS and Technology for Energy Corp. (TEC). All devices were linear, gas-filled proportional counters, the first two achieving spatial location of signals by delay line, the third by rise-time encoding. Active lengths and claimed resolutions were: 50 mm, 0.12 mm (Marconi-Avionics); 100 mm, 0.1 mm (TEC); and 130 mm, 0.2 mm (Stoe). The central wire of the Stoe detector was curved to a 130 mm radius through a novel magnetic levitation technique. Literature on a television-based two-dimensional PSD, designed from a system developed by Arndt & Gilmore (1979), was distributed by Enraf–Nonius. This device is to be integrated with the manufacturer's CAD4 diffractometer system and may not be sold as a separate entity.

Information about another (much older) kind of two-dimensional PSD could be obtained from the representatives of Ceaverken AB and Eastman Kodak Co. Products available from these vendors were part of the updated study of X-ray film charactersitics presented by Dawson, Mills & Elder (1981) during the open meeting of the Commission on Crystallographic Apparatus.

Workers in diverse crystallographic disciplines have sensed a growing need for systematic computer-assisted schemes for deposition and retrieval of structural data. These needs have been addressed though the good will of small groups of crystallographers around the world who have established, maintained and improved data bases devoted to identifiable areas of structural research. A popular island among the commercial exhibits in the Unicentre was occupied by four of these systems – the Cambridge Structural Data Base, the Inorganic Crystal Structure Data Base, the Metal Structure Data Base, and the JCPDS/CIS Data Base. Coupled with information status reports on each of these files during the open meeting of the Commission on Crystallographic Data, the working displays in the Unicentre should have stirred the interest and imagination of many visitors. A fifth data base, the Protein Data Bank, was also described at the open meeting, with further information available at a table in the Commons Lounge.

Crystallographers owe a special debt of thanks to their colleagues (Olga Kennard, G. Bergerhoff, L. D. Calvert, A. D. Mighell, C. R. Hubbard, T. F. Koetzle, among others) who have contributed their time and talent to setting up these invaluable data centers.

This brief summary is doubtlessly biased by some of the particular interests of the writer, and certainly omits many instruments, X-ray generators, image processors, *etc.* in the exhibition that must have had special significance to others. For these oversights, the indulgence of the exhibitors must be sought. Finally, the

Union must recognize with thanks the considerable efforts of Dr C. M. Mitchell and his committee who, as part of the Organizing Committee, were responsible for the successful arrangement and supervision of the exhibits.

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References

Arndt, U. W. & Gilmore, D. J. (1979). *J. Appl. Cryst.* **12**, 1–9.

Dawson, S. C., Mills, O. S. & Elder, M. (1981). Paper 16.X–02 presented at the XIIth Congress and General Assembly of the International Union of Crystallography, Ottawa, Canada, 16–25 August, 1981 [*Acta Cryst.* (1981), A**37**, C311].

Huang, T. C., Ayers, G. L. & Parrish, W. (1981). Paper 12.2–01 presented at the XIIth Congress and General Assembly of the International Union of Crystallography, Ottawa, Canada, 16–25 August, 1981 [*Acta Cryst.* (1981), A**37**, C280].

Parrish, W. & Huang, T. C. (1981). Paper 12.5–01 presented at the XIIth Congress and General Assembly of the International Union of Crystallography, Ottawa, Canada, 16–25 August, 1981 [*Acta Cryst.* (1981), A**37**, C282].

Shedrick, G. M. (1976). *SHELX 76. A program for crystal structure determination.* Univ. of Cambridge, England.

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, 5 Abbey Square, Chester CH1 2 HU, England).

Dr **R. M. Bozorth** died on 24 January 1981. Although Dr Bozorth's most important work was done in the field of magnetism, his work for his PhD was done in crystallography and he was one of the first crystallographers at Bell Laboratories.

Dr **J. R. Schneider**, Hahn-Meitner-Institut für Kernforschung, Berlin, has received the Viktor Moritz Goldschmidt Prize from the German Mineralogical Society for his work on the diffraction of γ-rays in crystals. In the late sixties Professor **H. Maier-Leibnitz** encouraged Dr. Schneider to employ the diffraction of high-energy γ-rays in the study of mosaic structures of large crystals intended for use as neutron beam monochromators. Dr Schneider developed this method as a successful tool not only for studying perfection of crystals but also for measuring accurate structure factors for charge density determinations. He has also extended the use of high-energy γ-rays to the study of momentum densities.

International Union of Crystallography

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The Executive Committee of the International Union of Crystallography has found it necessary to increase the yearly subscription rates and also the prices of back numbers for *Acta Crystallographica* and *Journal of Applied Crystallography* as from 1 January 1982. Every endeavour has been made to keep these increases to a minimum.

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