

Many inorganic structures were also presented. Several could be described by the packing of spheres, such as $A_3B_2X_9$ ($A = \text{Rb, Cs}; B = \text{As, Sb}; X = \text{Cl, Br, I}$) which consists of hexagonal AX_3 layers with B in octahedral interstices. $\text{LaFe}_2\text{P}_{12}$ is a structure derived from CoAs_3 structures by filling distorted icosahedral and octahedral voids with lanthanum and iron atoms respectively. The trigonal pyramidal nature of As(III)-O stereochemistry was noted. In compounds $\text{MP}_{7-x}\text{As}_x$ ($M = \text{Li, Na}$) the distribution of phosphorus and arsenic is not statistical, but depends upon the formal charge at the position and the electronegativity of the atom filling it. The I_3Cl_2^- ion in I_3SbCl_6 was shown to have a linear arrangement of iodine atoms with a chlorine atom at each end arranged perpendicular to the I_3 group. Silver iodide complexes Ag_2INO_3 and $\text{Ag}_2\text{I}_2\text{F}_5$ were studied and K_2FeF_6 was shown to exist as infinite zigzag *cis* chains of FeF_6 octahedra. The shapes of the phosphorus network in polyphosphides were also investigated.

Other structural studies included ternary phosphorus chalcogenides, the TeO_3^{2-} ion, cadmium germanates and some silicates such as $\text{K}_3\text{NdSi}_6\text{O}_{15}$ and $\text{K}_2\text{CeSi}_6\text{O}_{15}$. Several minerals such as hohmannite, malachite, gibbsite, biotites, and tvalchrelidzeite were studied. In the case of silicates the chains formed by SiO_4 tetrahedra can be linear or branched. The periodicity (number of tetrahedra in the identity period of the chain) depends on the cation present. In such polymers the Si-O-Si angle can deviate appreciably from the mean value of 140° . In the case of some barium silicates, high-resolution electron microscopy was used to show the variation in chain multiplicity.

Magnetic and ferroelectric properties were the object of many studies. The anti-ferromagnetic domain distribution in nickel oxide was studied by magnetic neutron Laue diffraction which allows the arrangement and direction of magnetic moments to be determined. The ferroelectricity associated with the high-temperature phase of ammonium nitrate was investigated and a structural basis involving nitrate groups was suggested to account for this effect. Charge transfer in $\text{M}_x\text{Mo}_3\text{S}_4$ compounds from the interstitial cation M to the closely packed octahedron formed by the molybdenum atom is probably an important factor in this class of high-field superconductors. Also the semiconductor-semiconductor phase transition of V_3O_5 at 155° , which involves a change in crystal structure, was studied by a comparison of both structures. The paraelectric phase of CsH_2PO_4 was also described. Some octa-

hedral complexes of Cu(II) and Mn(III) were studied with respect to Jahn-Teller distortions. Cu(OH)_6^{2+} shows four Cu-O distances of 1.96–1.97 Å and two of 2.81 Å. Other examples of (4+2)-distorted coordination octahedra were shown. The MnF_6 group in the compound $\text{Rh(NH}_3)_6\text{MnF}_6$ is regular, implying a dynamic Jahn-Teller effect.

Many organometallic and coordination compounds were examined. Cubane-like structures were found containing four of each Co(II) and F^- or Ni(II) and OH . A tetrahedral Ru_4 cluster was found to contain two short and four longer Ru-Ru edges. Many chelated metal salts were studied, for example neodymium fumarate, some iron(III) dithiocarbamates and many complexes of Cr(III) , Pt(II) , Cu(II) , Zn(II) and Ni(II) . Some Pt(I) complexes contained Pt-Pt bonds and a Pt(0) complex, $\text{Pt(C}_2\text{H}_4)_2(\text{C}_2\text{F}_4)$ was shown by neutron diffraction to be a π complex and its geometry was described. Some niobium(V), indium(III) and Ni(II) porphyrins were studied. Some very interesting transition-metal hydride coordination complexes were studied by neutron diffraction. A metal-metal (Re-Re) bond bridged by four hydrogen atoms was found. A neutron diffraction study of hydrated $\text{Na}_3\text{Mo}_5\text{PO}_3(\text{OH})_3$ showed an anion structure consisting of a wide channel 6 Å diameter which contains water.

The meeting was also a celebration for Dorothy Hodgkin on the occasion of her retirement, although, of course, she will continue working as ever. Many of her former students, from countries all around the world, made a point of attending the meeting. Gifts were brought for her and presented at the end of the meeting. It was hoped that the excellent scientific caliber of the meeting might serve as an appropriate tribute to her.

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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).

Professor **R. A. Cowley**, Professor of Physics at the University of Edinburgh,

Dr **A. Howie**, lecturer in physics at the University of Cambridge, Dr **R. B. Nicholson**, Managing Director of Inco Europe Ltd, London, Dr **D. A. Ramsay**, principal research officer at the National Research Council of Canada, Ottawa, and Professor **J. V. Smith**, Professor of Mineralogy and Crystallography at the University of Chicago, USA, have been elected Fellows of the Royal Society.

Dr **David Harker** has joined the staff of the Medical Foundation of Buffalo, USA, as a Research Scientist Emeritus.

Dr **H. R. Morris**, of the Department of Biochemistry, Imperial College, has been awarded the BDH Award in Analytic Biochemistry for 1978.

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