Union, but all crystallographers are cordially invited to attend the International Congress. Those outside of the U.S.A. expecting to be present are requested to inform the General Secretary at a very early date in order that detailed planning may proceed without delay; those willing to contribute papers should at the same time forward details for consideration by the Programme Committee. Crystallographers in the U.S.A. will receive separate notification from the A.S.X.R.E.D. or the Crystallographic Society of America. It will unfortunately not be possible for the Union to provide funds to assist delegates in attending the Congress and crystallographers should therefore make their own arrangements in this matter.

kX and Ångström units

The following letter is reprinted by permission from *J. Sci. Instrum.* (1947), **24**, 27:

At the annual conference of the X-ray Analysis Group of the Institute of Physics in July 1946 it was announced that agreement had been reached concerning the factor for converting measurements in kX units to Ångström units. The factor agreed upon, after consultation with the American Society for X-ray and Electron Diffraction and Prof. Siegbahn was 1·00202. This factor is probably correct to 0·003 %. Since wave-lengths in X-units have been measured to an accuracy of 0·001 %, the wave-lengths in Ångström units can be taken as accurate to 0·004 % in general.

The following is a list of values of wave-lengths in Ångström units of certain emission lines and absorption edges in common use. The column headed $K\alpha$ gives the mean value of $K\alpha_1$ and $K\alpha_2$, $K\alpha_1$ being allowed twice the weight of $K\alpha_2$.

Current values of the physical constants, such as those quoted by Birge in the 1941 volume of the Physical Society's *Reports on Progress in Physics*, should be used in conjunction with these wave-lengths. In particular, density ρ is given by the equation

$$\rho = 1{\cdot}66020\ \Sigma A/V,$$

where ΣA is the sum of the atomic weights of the atoms in the unit cell, and V is the volume of the unit cell in A^3.

	$K\alpha_1$	$K\alpha_2$	$K\alpha$	$K\beta_1$	Absorption edge
Cr	2·289 62	2·293 52	2·290 9	2·084 79	2·070 1
Mn	2·101 74	2·105 70	2·103 1	1·910 16	1·895 4
Fe	1·935 97	1·939 91	1·937 3	1·756 54	1·742 9
Co	1·788 90	1·792 79	1·790 2	1·620 73	1·607 2
Ni	1·657 83	1·661 68	1·659 1	1·500 08	1·486 9
Cu	1·540 50	1·544 34	1·541 8	1·392 17	1·380 2
Zn	1·435 10	1·438 94	1·436 4	1·295 20	1·283 1
Mo	0·709 26	0·713 54	0·710 7	0·632 25	0·619 7
Rh	0·613 26	0·617 62	0·614 7	0·545 59	0·534 1
Pd	0·585 45	0·589 82	0·586 9	0·520 52	0·509 0
Ag	0·559 41	0·563 81	0·560 9	0·497 01	0·485 5

It is recommended that in any published work the values of the wave-lengths used should be explicitly stated.

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Authors of papers intended for publication in *Acta Crystallographica* are requested to express cell dimensions and related quantities in Ångström units and, when the accuracy of the work justifies the distinction between these and kX units, to avoid all possible confusion by quoting also explicitly the wave-length of the radiation used.

Book Reviews

Works intended for notice in this column should be sent direct to the Editor (P. P. Ewald, The Queen's University, Belfast, Northern Ireland). As far as practicable books will be reviewed in a country different from that of publication.

Grundlagen der allgemeinen Mineralogie und Kristallchemie. By F. Machatschki. Pp. vii + 209, with 151 figs. Springer Verlag, Vienna, 1946. Price, 16 schillings; $2.80.

Professor Machatschki, who now occupies the chair of mineralogy in the University of Vienna, has been associated with the development of the X-ray analysis of the crystal structure of minerals since 1927. For a time he joined the group of brilliant research workers who formed the Bragg school in Manchester and first suggested in outline the framework of the felspar structures. Since then he has produced an unceasing flow of papers ranging over the whole field of mineral chemistry.

The book now under review is a well-written, clearly printed, and adequately illustrated class-book suitable for teaching elementary students. It is divided into three main sections; crystallography, crystal physics, and crystal chemistry, and concludes with brief accounts of the genesis of crystals, etch figures and pseudomorphs. Particularly commendable are the introductions to crystal optics and crystal chemistry. The author's method of tabulating the thirty-two crystal classes, however, is less in keeping with the up-to-date treatment in the rest of the book. Although two systems of naming the crystal classes are given, only Schoenflies symbols are used. Most teachers of the subject will regret his missing the chance of introducing students as soon as possible to the simpler and more elegant Hermann-Mauguin nomenclature.

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Die Bewegungsgruppen der Kristallographie. By J. J. Burckhardt. Pp. 189, with 56 figs. Verlag Birkhäuser, Basel. Price, 29 Swiss francs.

This book represents the result of a twenty-year investigation of the intrinsic mathematical theory of the crystallographic groups. In the words of Burckhardt: 'Mich heute von dieser Arbeit zu trennen, fällt mir schwer: während zwanzig Jahren war sie mein Stab und meine Stütze zugleich.' The basic point of view of the book resembles closely that adopted by the reviewer in a series of articles in the *Zeitschrift für Kristallographie* in the early 1930's under the title 'A Matrix-Algebraic Development of the Crystallographic Groups'. That is, an attempt is made to abstract the process of deriving the crystallographic groups from the somewhat earth-bound tactics of straight-edge and compass geometry used by the group of theoretical