conclusive,* it seemed desirable to point out that the method has some very serious objections which are related to non-parallelism of the incident wave vectors $\mathbf{s}_0$ and to the mosaic character of crystals.

With an incident beam defined within a very small fraction of a second of arc and a perfect crystal oriented within the same degree of precision, it seems possible that interference phenomena might be observable. Let us suppose, however, that the incident wave vectors for various directions correspond to a slightly non-parallel set of $\mathbf{s}_0$'s. The various spheres of reflection for the various $\mathbf{s}_0$'s will all intersect the origin (by definition) but not simultaneously the end-points of the vectors $\mathbf{h}_1$ and $\mathbf{h}_3$. In fact all $\mathbf{s}_0$'s corresponding to displacement about $\mathbf{h}_3$ of the center of the sphere of reflection going through the reciprocal-lattice point $(h_3k_3l_3)$ will give diffractions $(h_3k_3l_3)$, but only a very small fraction of these would also give the two successive diffractions $(h_1k_1l_1)$ and $(h_2k_2l_2)$, and interference effects of any kind would ordinarily be completely obliterated.

If one substitutes a mosaic crystal for the perfect crystal, only a small fraction of the crystal could possibly be lined up precisely enough to show interference effects with a given $\mathbf{s}_0$, but a very much larger fraction of the crystal could be expected to contribute by single diffraction to $(h_3k_3l_3)$ when the crystal is rotated about some average $\mathbf{h}_1$. This effect contributes an additional component to $(h_3k_3l_3)$ which could not show interference effects. When the effect of variation of $\mathbf{s}_0$ is superimposed it is seen that the obliteration of the interference effects would be considerably greater for a mosaic crystal than for a perfect crystal.

Finally, even in a perfect crystal the interference effects which would actually occur may not be those due to the structure factor only. It has been pointed out to me* that if one makes a variation of $\mathbf{s}_0$ even small enough, say of the order of a few seconds of arc, so that all three diffractions may still be occurring, the interference effects due to geometrical details related to the precise directions of the beams through the crystal might blot out any trace of the influence of the phase relations due to the structure factor. The different polarization effects for the different beams and the boundary conditions at the crystal surface introduce additional complicating factors in the interpretation of the interference effects.

* The idea and experiments suggested here have been independently conceived by Prof. I. Fankuchen and by Dr Hans Ekstein. Their investigations included similar experiments of this type on pentaerythritol, with inconclusive results with respect to phase relations (private communications). In this laboratory, Mr R. L. Collin and I have carried out experiments in which (040) of glycine was maintained on the sphere of reflection and the $\{h0l\}$ zone was photographed with the use of Cu K radiation and a Weissenberg goniometer. Three forbidden reflections, (100), (102) and (10$\bar{2}$), were observed, with relative intensities 50, 12 and 16, respectively, on the scale (040) = 5000, given by Albrecht & Corey (1939). No information concerning phase relations was obtained.

* I am very much indebted to Prof. P. P. Ewald for this suggestion. Cf. Lamla (1939); also von Laue (1941, § 27, especially pp. 262–4).

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Notes and News

Announcements and other items of crystallographic interest will be published under this heading at the discretion of the Editorial Board. Copy should be sent direct to the British Co-editor (R. C. Evans, Crystallographic Laboratory, Cavendish Laboratory, Cambridge, England).

International Union of Crystallography

Notice of adhesion has been received from India, dated 15 March 1949, and from Belgium, dated 23 March 1949. The Adhering Bodies are now:

Australia	Group I
Belgium	Group III
Canada	Group IV
Czechoslovakia	Group I
France	Group VII
India	Group I
Netherlands	(Not yet known)
Norway	Group I
United Kingdom	Group VIII
United States of America	Group VIII

Tables for Harmonic Synthesis

The Crystallographic Laboratory of the Johns Hopkins University, Baltimore 18, Md., U.S.A., announces the publication of *Tables for Harmonic Synthesis* by J. D. H. Donnay and G. E. Hamburger. The tables give the terms of Fourier series to one decimal at every millicycle, tabulated for coefficients 1–100, and fiducial cosine values to eight decimals. The work is a mimeographed preprinted edition of 103 pages in loose-leaf binding and may be obtained from J. D. H. Donnay at the above address at a price of $10.00 f.o.b.

Self-binders for *Acta Crystallographica*

Arrangements have been made with Messrs Easibind Ltd., Pilot House, Mallow Street, London, E.C. 1, England, for

the provision of self-binders for *Acta Crystallographica*. The binders are designed to carry the twelve parts of two successive volumes which are held without damage by steel wires. They may be used either for temporary or for semi-permanent binding and are accordingly supplied in two styles:

(1) Lettered with title only.
(2) Lettered with title, volume numbers and years (e.g. Vols. 1 & 2, 1948–9).

The price of the binder is 12*s*. 6*d*. post free throughout the world. Orders should be placed direct with Messrs Easibind Ltd. stating clearly which style is required.

Acta Crystallographica

1. From 1 October 1949 the permanent address of the Editor will be:

P. P. EWALD,
Polytechnic Institute of Brooklyn
99 Livingston Street,
Brooklyn 2, N.Y., U.S.A.

2. A further very generous contribution towards the cost of producing this journal has been received from the General Motors Corporation, Detroit, Michigan, U.S.A.

Crystallographic Society of America *Memoirs*

The Crystallographic Society of America announces the publication of Memoir No. 1, *Memoir on the Systems formed by Points regularly distributed on a Plane or in Space* by A. Bravais, being a translation by Amos J. Shaler of the Massachusetts Institute of Technology from the original in *Journal de l'École Polytechnique*, Cahier 33, Tome 19, pp. 1–128 (1850).

It is a well-known fact that there are fourteen space-lattice types, but very few people know just why there are fourteen. It is in this classical memoir that these results were first developed. Here, also, the polar lattice (now known as the 'reciprocal lattice') was first presented. In other words, this is *the* source work on lattices. The development of the subject is easy to understand and requires no knowledge of advanced mathematics.

The original is published in French in a journal which is available in only a few of the larger libraries. It has been considered of such importance that it has been translated into other languages. The present publication makes this classic work available, for the first time, to English-speaking crystallographers.

Copies may be obtained at $3·90 each from William Parrish, Philips Laboratories, Inc., Irvington-on-Hudson, N.Y., U.S.A.

Acta Cryst. (1949). **2**, 195

International Union of Crystallography

The audited accounts of the Union for the period from its formation on 7 April 1947 to 31 December 1948 are printed below.

Acta Crystallographica Account for the period from 7 April 1947 to 31 December 1947

	£	*s*.	*d*.		£	*s*.	*d*.
Editorial Honoraria	224	16	0	Subvention from U.N.E.S.C.O.	654	5	5
Secretarial Wages and National Insurance ...	51	1	8	Subventions from British Sources	1936	10	0
Office Rent, Postages, Telephone, Stationery, Printing and Sundry Expenses	104	16	9				
Editors' Travelling Expenses	8	0	0				
Depreciation of Office Equipment	1	12	3				
Surplus of Income over Expenditure for the period, carried forward	2200	8	9				
	£2590	15	5		£2590	15	5

Acta Crystallographica Account for the year ended 31 December 1948

	£	*s*.	*d*.	£	*s*.	*d*.		£	*s*.	*d*.	£	*s*.	*d*.
Publication Expenses:							Subventions from U.N.E.S.C.O.	656	14	10			
Printing and Binding ...	1815	9	2				Subventions from British Sources	1642	0	0			
Advertising	65	0	0				Subventions from U.S.A. Sources	420	14	6			
Circularizing, Postage, Insurance and Sundries ...	90	0	0								2719	9	4
Publishers' Commission on Production and Sales ...	494	0	1				Trade and General Subscriptions, Volume 1	1711	0	0			
				2464	9	3	Sale of Single Copies and Reprints	246	15	0			
Editorial Honoraria				400	0	0					1957	15	0
Secretarial Wages and National Insurance				175	13	2							
Office Rent, Postages, Telephone, Stationery, Printing and Sundry Expenses				163	17	4							
Editors' Travelling Expenses ...				38	13	2							
Depreciation of Office Equipment				3	2	9							
Surplus of Income over Expenditure for the year, carried forward				1431	8	8							
				£4677	4	4					£4677	4	4