Table 1. *Description of structure*

No. of Atoms	Position	x	y	z	Kind	Ligancy
4	(*b*)	½	½	½	Si	14
24	(*d*)	¼	¼	0	Si	12
24	(*e*)	0·179	0	0	Mg	17
32	(*f*)	0·169	0·169	0·169	Cu	12
32	(*f*)	0·376	0·376	0·376	Cu	13

group is O_h^5–*Fm*3*m*. The structure can be described as follows. At (0, 0, 0) there is a group of magnesium atoms with the atoms located at the vertices of an octahedron. Outside this group of atoms there are eight copper atoms at the vertices of a cube. Twelve silicon atoms at the vertices of a cubo-octahedron surround this cluster of fourteen atoms. The twelve silicon atoms are shared with the clusters associated with the neighboring lattice points. At $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$ there is finally one silicon atom surrounded by eight copper atoms at the vertices of a cube. There are consequently six magnesium atoms, seven silicon atoms, and sixteen copper atoms per lattice point and 116 atoms per unit cube, in agreement with Witte's findings.

Although the structure factors calculated for this structure agreed well with the observed ones it could not be taken as certain that the copper and silicon atoms are not disordered to some extent, as copper and silicon are known to form binary phases with disordered crystal structures, e.g. Cu_5Si. Admittedly disorder appeared very unlikely since the phase is known to occur with a composition that is always very close to the composition of the ordered structure described above. Fourier projections showed, however, that the structure is most likely completely ordered.

With the notation in the *International Tables for the Determination of Crystal Structures* (1935) for space groups O_h^5–*Fm*3*m* the structure may be described as in Table 1.

The parameters are obtained from a least-squares refinement based on *hk*0 data obtained with Cu $K\alpha$ radiation.

Florio, Rundle & Snow (1952) have recently reported on the determination of the crystal structure of the intermetallic compound Th_6Mn_{23}. The structure they found is a simpler variation of the structure described above. The thorium atoms occupy the same positions as the magnesium atoms and the manganese atoms occupy the same positions as the silicon and copper atoms in the ternary phase.

A detailed report on the determination of the $Mg_6Si_7Cu_{16}$ structure will be published later.

The authors wish to thank Prof. Linus Pauling for suggesting this problem and for helpful criticism.

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Silver formed by electron bombardment of silver bromide.

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(*Received* 26 *August* 1952)

In his recent publication on the growth of silver which occurs during electron bombardment of thin films of oriented silver bromide, Trillat (1952) states that in our experiments (Berry & Griffiths, 1950) on the decomposition of silver bromide by light, the important action of electrons on the liberation of silver does not appear to have been considered sufficiently. On the contrary, we were quite aware of the possible photographic action on the crystals of the detecting beams of both X-rays and electrons, and we reported in our paper some measurements on the effect in both cases. Confining our attention to one of our statements on the action of electron beams, we said: 'Before ultraviolet irradiation, no silver was detected, even after electron bombardment for several times the normal exposure'. The time of the electron bombardment used in these tests was of the order of 100 times that used in the regular diffraction experiments. We would not deny that some silver was produced by the measuring electron beam, but the amount was certainly small compared with that which was produced by the ultraviolet and visible illumination. Whatever silver was produced by the electrons would doubtless add to the large crystals already produced by the light. We feel confident that the orientations of the large quantities of silver produced by the light were in no way altered by our measuring beams of X-rays or electrons.

We also wish to comment on Trillat's observation that no preferred orientation of silver was produced by the action of photographic developer on his evaporated films. We have found that the parallel orientation of silver may be produced on large single crystals of silver bromide by the action of Kodak Developer D-19, diluted to about 1/1000 normal strength, but that twinning and random orientation are found in the silver produced by more rapid reaction.

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