where p is the multiplicity factor, $F_{(hkl)}$ is the structure amplitude and the remaining term is twice the Lorentz and polarization factor. The scattering factors for both elements were obtained from the *Internationale Tabellen* (1935). Dispersion corrections from Dauben & Templeton (1955) were applied. The agreement between observed and calculated intensities for YNi_2 confirms the proposed structure for this compound. Some variation in the observed intensities due to the different dispersion of the Cu $K\alpha$ radiation by Ni, Co, Fe and Mn was noted, but still the agreement between the calculated intensities for YNi_2 and observed intensities for YCo_2, YFe_2 and YMn_2 leave little doubt that these compounds are all isostructural.

These cubic Laves phases belong to the space group O_h^7–$Fd3m$ with

$$8\,\text{Y at: } 0, 0, 0;\ \tfrac{1}{4}, \tfrac{1}{4}, \tfrac{1}{4},\ +\text{f.c.}$$

and

$$16M^* \text{ at: } \tfrac{5}{8}, \tfrac{5}{8}, \tfrac{5}{8};\ \tfrac{7}{8}, \tfrac{7}{8}, \tfrac{5}{8};\ \circlearrowright\ +\text{f.c.}$$

The lattice constants and interatomic distances for these four compounds are given in Table 1.

The compounds YMn_2, YFe_2 and YCo_2 have only a slight composition range, since only a decrease of 0·004 Å was noted between the 65·0 and 68·0 at.% M^* alloys in these three cases. However, YNi_2 appears to have a composition range since its lattice constant in the 65·0 at.% Ni alloy was $7{\cdot}183 \pm 0{\cdot}002$ Å in the 68·0 at.% Ni alloy was $7{\cdot}164 \pm 0{\cdot}001$ Å. Atomic and molecular volume considerations indicate a composition range of 0·7 at.% in YNi_2.

* M = Ni, Co, Fe or Mn.

Table 1. *Lattice constants and interatomic distances*

Compound	a_0 ($\pm 0{\cdot}002$ Å)	Interatomic distances A–A	B–B	A–B
YNi_2	7·181 Å	3·109 Å	2·539 Å	2·977 Å
YCo_2*	7·216	3·125	2·551	2·991
YFe_2	7·357	3·186	2·601	3·050
YMn_2	7·680	3·325	2·715	3·184

* This lattice constant is in agreement with the value reported by Wernick & Geller (1960).

References

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Internationale Tabellen zur Bestimmung von Kristallstrukturen (1935). Berlin: Borntraeger.

Wernick, J. H. & Geller, S. (1960). Rare-Earth Compounds with the $MgCu_2$ Structure. To be published in *Trans. Amer. Inst. Min. (Metall) Engrs.*

Notes and News

Announcements and other items of crystallographic interest will be published under this heading at the discretion of the Editorial Board. The notes (in duplicate) should be sent to the General Secretary of the International Union of Crystallography (Dr D. W. Smits, Laboratory of Inorganic and Physical Chemistry, 10 Bloemsingel, Groningen, The Netherlands).

Pittsburgh Diffraction Conference

The annual Pittsburgh Diffraction Conference will be held November 9–11, 1960, at Mellon Institute, Pittsburgh, Pennsylvania, U. S. A. Sessions will be devoted to metals and alloys, instrumentation, structures, polymers and fibres, refractories, electron probes and electron diffraction. The evening meeting will be addressed by Professor I. Fankuchen of the Polytechnic Institute of Brooklyn. Further information can be obtained from L. F. Vassamillet, Mellon Institute, 4400 Fifth Avenue, Pittsburgh 13, Pennsylvania.