$\sum_i \sum_j JF_o^2$ was 0·035. The observed and calculated intensities are given in Table 1. The thermal parameters found were $B_{Ni}=0{\cdot}45$ (8) Å^2 and $B_F=0{\cdot}56$ (9) Å^2. These may be low if thermal diffuse scattering (TDS) is present, but TDS normally has little effect on positional parameters (Cooper, 1970). The correlation coefficients involving x_F and the scale factor, B_{Ni} and B_F were low (−0·007, 0·008 and 0·084 respectively).

Whereas the previous X-ray results indicated a slight distortion, the neutron refinement gives an undistorted octahedron in NiF_2. The present values of l_1 and l_2 are similar to the Ni–F distance of 2·006 Å in the perovskite $KNiF_3$, where the octahedron is regular by symmetry (Knox, 1961). The deviation from the Born model for NiF_2 is greater than in the previous work, lending further support for the conclusion of Baur & Khan (1971) that the simple Born model alone may not explain the observations.

The results of the present neutron and previous X-ray work are given below:

Study	x_F	l_1(Å)	l_2(Å)
Present work (neutron)	0·3052 (6)	2·005 (3)	2·007 (4)
Baur & Kahn (1971) (X-ray)	0·3012 (13)	2·022 (6)	1·981 (9)

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Cell constants of two hexachloropalladates.

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The unit-cell constants of potassium and ammonium hexachloropalladate have been redetermined as 9·7066 (3) and 9·8222 (4) Å respectively at 20°C.

Both potassium and ammonium hexachloropalladates have the K_2PtCl_6 structure (Wyckoff, 1965), with space group *Fm3m* (No. 225). Sharpe (1953) determined their lattice constants to be 9·74 (1) and 9·84 (1) Å. Bell, Hall & Wates (1966) redetermined the lattice constant of the ammonium salt to an accuracy of 0·01 Å. Greater accuracy has now been obtained by the use of relatively standard equipment and techniques.

Samples were obtained from FLUKA AG. Analysis results were:

K_2PdCl_6	26·8% Pd calc.,	26·7% Pd found;
$(NH_4)_2PdCl_6$	30·0% Pd calc.,	30·6% Pd found.

The positions of the peaks for angles (2θ) from 2° to 150° were obtained with unfiltered copper radiation on a Philips PW1050 diffractometer. Wavelengths of the different X-ray lines used were:

Cu $K\bar{\alpha}$	1·54178 Å
Cu $K\alpha_1$	1·54051
Cu $K\alpha_2$	1·54433
Cu $K\beta$	1·39217.

For all the reflexions arising from Cu $K\alpha_1$ a graph of d_{obs} against cot (θ_{obs}) was drawn adapting the method of Bracher & Small (1967) to eliminate zero errors in θ. The θ values for all of the reflexions were corrected and used in the program *CELFIT* of Bracher (1967) to refine the cell parameter. The parameters obtained for the two compounds at 20°C are:

K_2PdCl_6	9·7066 (3) Å
$(NH_4)_2PdCl_6$	9·8222 (4) Å.

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