Observed and calculated values of $\sin^2\theta$ are given in Table 1.

Although this interpretation gives only about one quarter of the lines present (Perio's gave less than one tenth), it is felt that it can be accepted in the absence of a better one, as the cell is large and asymmetric and the pattern is rather diffuse.

The evidence for the space group is not very conclusive. For $P2_1/c$ symmetry, $(h0l)$ reflections are absent if l is odd. It is not possible to say whether (201), (203) and $(10\bar{5})$ are present or not as these reflections would occur at $\sin^2\theta = 0{\cdot}0262$, $0{\cdot}1259$ and $0{\cdot}3163$ at which points several other reflections coincide (see Table 1). The other systematic absence to be expected is $(0k0)$ with k odd. In fact, only one $(0k0)$ reflection was observed, (0,10,0), although the others do not coincide with other lines. It is possible that $(h0l)$ is also absent when h is even. However, this is not a space-group extinction and, if this absence is real, it is probably due to some special arrangement of the uranium atoms. It is calculated from density measurements that there are 22 formula UO_3 per unit cell, but this must be either 20 or 24 for reasons of symmetry. As 24 units can be fitted into the unit cell, this value is favoured.

In the absence of a single crystal, no further work on this compound is contemplated.

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The crystal structure of ZrO_2 and HfO_2.

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McCullough & Trueblood (1959) pointed out that the crystal structure of baddeleyite (monoclinic ZrO_2) as determined by Náray-Szabó (1936) is not correct and published a new description of the structure based on single-crystal data obtained from a natural crystal.

Approximately a year ago while working on the irradiation induced phase transformations in ZrO_2 (Adam & Cox) we have also concluded that the accepted Náray-Szabó structure is wrong and made accurate X-ray intensity measurements on chemically prepared ZrO_2 and HfO_2 powder with a counter diffractometer and monochromatic copper $K\alpha$ radiation. Using atomic parameters proposed by McCullough & Trueblood (1959) a satisfactory agreement was obtained between calculated and observed F^2 values for both materials although a few minor discrepancies have been found. This indicates that HfO_2 and ZrO_2 are isomorphous and their structure is basically the same as that of naturally occurring baddeleyite. The following unit-cell dimensions have been determined using a Guinier-type focusing camera:

	a (Å)	b (Å)	c (Å)
ZrO_2	$5{\cdot}1454 \pm 0{\cdot}0005$	$5{\cdot}2075 \pm 0{\cdot}0005$	$5{\cdot}3107 \pm 0{\cdot}0005$
	β		
	$99° 14' \pm 0° 05'$		
	a (Å)	b (Å)	c (Å)
HfO_2	$5{\cdot}1156 \pm 0{\cdot}0005$	$5{\cdot}1722 \pm 0{\cdot}0005$	$5{\cdot}2948 \pm 0{\cdot}0005$
	β		
	$99° 11' \pm 0° 05'$		

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International Union of Crystallography

Fedorov Commemoration, Leningrad, 21–27 May 1959

By invitation of the Academy of Sciences of the U.S.S.R., the Union participated in two Symposia which were held in Leningrad, U.S.S.R., from 21 to 27 May 1959 in commemoration of the 40th anniversary of the death of the great Russian crystallographer E. S. Fedorov. Under the auspices of the Union and the Academy, the meetings were organized by the U.S.S.R. National Committee for Crystallography in cooperation with the Institute of Crystallography of the Academy of Sciences, the Mineralogical Society of the U.S.S.R., the Leningrad Institute of Mines, and the Fedorov Institute of Crystallography, Mineralogy and Petrography.

Over eight hundred crystallographers and other scientists, mainly from the U.S.S.R., and in addition from fifteen other countries, participated in the meetings. The attendance of several of these scientists from abroad