

NOTES ON THE ESTIMATION OF POTASSIUM AS POTASSIUM
PLATINIC CHLORIDE. (Abstract). — BY MARGARET
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The separation of potassium from sodium and the subsequent estimation of the former by precipitation as the platonic chloride has ranked as a standard analytical process for many years.

According to the method in common use, sodium and potassium are first separated from all other constituents as chlorides. They are then converted into chlorplatينات by the addition of hydrochlorplatonic acid in presence of an excess of hydrochloric acid. The resulting solution is evaporated to dryness on a water bath and the residue treated with absolute alcohol. By these means, sodium platonic chloride is dissolved; the corresponding potassium salt being insoluble. The potassium chlorplatinate is then separated by filtration and finally dried to constant weight at a temperature not exceeding 100° C.

In any determination, drying to constant weight at a low temperature is to be avoided if possible, as it not only may introduce a considerable error, but undoubtedly increases the difficulty of manipulation.

It would be much simpler if it were possible to ignite the precipitate of potassium platonic chloride at a high temperature and from the weight of platinum obtained, calculate the amount of potassium present.

After a number of preliminary qualitative experiments, the following quantitative determinations were carried out.

Purified crystals of potassium platonic chloride were carefully dried and weighed and transferred to a weighed platinum crucible. The crucible and its contents were then ignited to the full heat of a Fisher-Meker burner until constant weight was obtained. The results were as follows:—

Wt. of K_2PtCl_6	0.6848	0.7890	0.3824	0.3758	0.3258	0.2584
Wt. of Platinum	0.2696	0.3180	0.1560	0.1496	0.1302	0.1034
Wt. Potassium						
from wt. of Plat-						
inum, (A)	0.1080	0.1274	0.0625	0.0599	0.0522	0.0414
Original Wt. of						
Potassium, (B)	0.1101	0.1269	0.0631	0.0604	0.0524	0.0416
Ratio: B/A	1.018	0.996	1.010	1.009	1.005	1.004

These results indicate that there is no loss in accuracy in the method which has been outlined. On the other hand, an appreciable saving of time and a greater ease of manipulation may be obtained by its use.

The reaction which takes place on ignition of the potassium chlorplatinate is best represented by the equation:—

