

On Chromic Acid and Sesquioxide of Manganese. By A. J. FAIRRIE, Esq.—When chromate of potash is added to a soluble salt of manganese, a chocolate-coloured precipitate subsides, which when dried at 212° , has, according to the analysis of Warington and Reinsch,* the formula $2 \text{ Mn O}, \text{ Cr O}_3 + 2 \text{ Aq}$. Mr. Danson, however, in working on the chromates, ascertained that the precipitate produced as above, is not a true chromate of manganese, but a salt composed of chromic acid and sesquioxide of manganese, mixed with a definite quantity of sesquioxide of chromium; for, on dissolving the precipitate in dilute nitric acid and adding potash, the precipitated sesquioxide of manganese gave indications of the presence of sesquioxide of chromium; hence the excess of manganese in Warington's analysis, the manganese having been determined by precipitation with potash.†

With the view of reconciling the discrepancies between these statements, Mr. Fairrie prepared a large quantity of the compound, by mixing chloride of manganese with chromate of potash, collecting the precipitate on a filter, washing thoroughly, and drying at 212° . The chromic acid was determined by boiling the salt repeatedly with potash, filtering, neutralizing with acetic acid, and precipitating by acetate of lead. To determine the sesquioxide of manganese, the salt was fused with nitre and carbonate of potash, and the fused mass boiled with dilute alcohol to decompose the permanganate, &c. The water was determined in the usual way, and the sesquioxide of chromium by loss.

* Gmelin's Handbuch (Translation), IV, p. 248.

† Chem. Soc. Trans., 1842, p. 31.

The following were the results obtained :

				Calculated.		Found.	
3 Mn ₂ O ₃	.	.	.	240	45·71	45·12	45·84
3 Cr O ₃	.	.	.	153	29·14	28·40	
Cr ₂ O ₃	.	.	.	78	14·85	15·66	
6 HO	.	.	.	54	10·30	10·82	10·74
				<hr/> 525	<hr/> 100·00	<hr/> 100·00	

The salt appears to be formed by the action of 7 equivs. of chromate of potash on 6 equivs. of chloride of manganese.
