

for wood, answers perfectly; the saw should have rather fine teeth and be run at a high speed. The feed, of course, must be slow.

*Analysis.*--Common western spelter containing one or two per cent. of lead will not all dissolve in hydrochloric acid, and the residue is likely to contain both zinc and iron. It should be filtered out, dissolved in nitric acid, evaporated with sulphuric, the lead sulphate filtered out and the filtrate added to the main solution.

The methods of separation proposed are nearly all slow and the accuracy of some, at least, is very doubtful. The method<sup>1</sup> recommended by the Committee of this Society on Uniformity of Zinc Analysis is easier, quicker, simpler and far more accurate than the one proposed, and it is applicable to all zinciferous materials.

*Aluminum Alloys.*--In many cases the presence of aluminum does very seriously affect the ferrocyanide precipitation.

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*The Detection and Identification of Manganese and Chromium in the Presence of Each Other.*--"To the cold, dilute nitric or sulphuric acid solution of the substance or mixture to be tested is added one or two cubic centimeters of a silver nitrate solution of the ordinary concentration, then a relatively large amount (two to five grams) of solid potassium persulphate, and the whole carefully heated until the evolution of oxygen due to the decomposition of the persulphate is practically over. By this means the manganese is converted into permanganic acid and the chromium into chromic acid. The permanganate color shows itself first and is usually best seen during the first few moments of heating. In order to detect the chromium present (the chromate or dichromate color being usually obscured by the permanganate color), the cooled solution is shaken with one-fourth to one-third its volume of ether, hydrogen peroxide added in excess, and the mixture well shaken. This decomposes the permanganate with evolution of oxygen and converts the chromic acid into perchromic acid, which dissolves to a blue color in the excess of ether. Acetic ester may sometimes be used to advantage in place of ordinary ether." The method is delicate, easily performed in an ordinary test-tube, and convenient in having no filtrations or fusions. In a course of Qualitative Analysis it may be tried either upon the original material or upon the proper group precipitate as one wishes. Halides should be absent and in case much manganese is present only small amounts of the substance analyzed should be taken, otherwise the manganese tends to be precipitated as manganese dioxide instead of being converted into permanganate.

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<sup>1</sup> THIS JOURNAL, 28, 262 (1907).