Philosophical Magazine Series 3

ISSN: 1941-5966 (Print) 1941-5974 (Online) Journal homepage: <http://www.tandfonline.com/loi/tphm14>

Note

R.D. Thomson

To cite this article: R.D. Thomson (1847) Note, Philosophical Magazine Series 3, 31:208, 258-259, DOI: [10.1080/14786444708562639](https://doi.org/10.1080/14786444708562639)

To link to this article: <http://dx.doi.org/10.1080/14786444708562639>

Published online: 30 Apr 2009.

Submit your article to this journal [↗](#)

Article views: 2

View related articles [↗](#)

22.76 grs. amounted to 13.71 grs., which is equivalent to 60.35 grs. per cent.

The next point was to precipitate the tersulphuret of molybdenum. This was done by making the solution in sulphohydret of ammonia slightly acid by means of muriatic acid. The tersulphuret went down in the form of a brownish-coloured precipitate. This was then thrown on a filter, dried, ignited and weighed. The quantity in 22.76 grs. was thus found to be 9.91 grs., which is equivalent to 39.13 per cent. of molybdic acid.

The constituents therefore of molybdate of lead according to this analysis are—

Molybdic acid	. .	39.19
Lead protoxide	. .	60.23
		<u>99.42</u>

Phosphates and arseniates of lead were decomposed in the same manner; and it is evident this process would also answer with antimoniates, vanadiates and seleniets.

	Klaproth.	Hatchett.	Göbel.	Parry.		J. Brown.			Theory.
Molybdic acid ...	34.25	38.00	40.50	*40.40	39.88	39.30	*40.64	39.19	39.13
Protoxide of lead	59.59	58.00	58.00	59.60	59.56	60.35	59.36	60.23	60.87
Peroxide of iron		2.08							
Silica		.28							
	93.84	98.36	98.50	100.00	99.44	99.65	100.00	99.42	100.00

Note by Dr. R. D. THOMSON.

Test for Arseniates, &c.—I may notice a simple and quick method of testing minerals containing arsenic in its various forms, phosphates, molybdates, vanadiates, &c. A few grains of the mineral to be examined are to be finely pulverized in an agate mortar and introduced into a test-tube, and boiled with bisulphohydret of ammonia for a few minutes. The mineral is partially decomposed; the sulphuret of lead precipitates, while sulphuret of arsenic, &c. is dissolved by the excess of the reagent. The tube is then allowed to stand at rest, and the supernatant liquor poured off or filtered. The excess of bisulphohydret of ammonia being removed by evaporation, the yellow sulphuret of arsenic precipitates. A molybdate is

* In these analyses the lead only was ascertained, and the deficiency was taken as molybdic acid.

The two last analyses were made by means of sulphohydret of ammonia, the three preceding by nitric acid.

On Fossil Calamites in the Carboniferous Strata near Wigan. 259

detected at once by the fine orange-red colour which the reagent assumes when it is heated in contact with that mineral.

A vanadate gives a dark colour, but possessing less of the red shade than the molybdate. The liquor filtered from the sulphuret of lead containing the vanadium in solution has a green colour, becoming blue by the addition of hydrochloric acid. Hence it appears that arsenic dissolved in bisulphohydret of ammonia does not alter the colour of that reagent, while the liquor gives a precipitate of orpiment by concentration. Molybdenum and vanadium, on the other hand, render that reagent reddish, and give brown precipitates by concentration. The liquor filtered from the sulphuret of molybdenum is colourless, or its hue is similar to that of the reagent, while the liquor derived from the vanadium precipitate is *green*.

I have succeeded in decomposing a sufficient amount of these minerals for quantitative analysis by the preceding process when they have been carefully pounded and lœvigated. The process is particularly advantageous in the analysis of molybdate of lead, where the use of nitric acid for dissolving the mineral is objectionable in consequence of its tendency to form the molybdate of molybdenum, and where hydrochloric acid, by producing a chloride of lead, renders the employment of an inconvenient quantity of water necessary. I have found this process for testing very convenient where it was desirable to use minute quantities of crystals, and where rapidity is an object in view, as in examining a large collection of minerals of the preceding description; and I mention it for the sake of those who may possess in their cabinets minerals of this nature which they may desire to test, since it may be found a useful adjunct to the blowpipe test.

The bisulphohydret affords a simple distinguishing test between metallic arsenic and antimony, when spots have been received on porcelain by Marsh's process. Arsenic dissolves in the reagent, and leaves a yellow stain by evaporation. Antimony dissolves and leaves an orange stain. For this experiment it is convenient to use the inside of the cover of a porcelain crucible.

XLIII. *On Fossil Calamites found standing in an erect position in the Carboniferous Strata near Wigan, Lancashire.* By E. W. BINNEY*.

THE fragmentary condition of the great bulk of fossil plants found imbedded in the coal measures has led many geologists to suppose that they had been drifted from adjoin-

* Read before the Literary and Philosophical Society of Manchester, July 6, 1847, and communicated by the Author.