

butter when heated in an open receptable) which has been in use for the detection of oleomargarine for many years, and which is preferred by some revenue officers to the microscope test.

C. A. CRAMPTON.

LABORATORY OFFICE OF INTERNAL REVENUE, U. S. TREASURY  
DEPARTMENT, WASHINGTON, D. C.

---

*The Analysis of Arsenical Insecticides.*—Since sending my article<sup>1</sup> on “The Adulteration and Analysis of the Arsenical Insecticides” to press I have done still further work on the soluble arsenious oxide in Paris green, and find that although an extraction of 1 gram of Paris green with 500 cc. of water finally gives practically constant results, still a small amount of cupric oxide goes into solution at the same time, thus indicating that either the Paris green itself is soluble in cold water or breaks up slightly on treatment with this medium. I am inclined to think that this last assumption is the more likely, since the amount of copper oxide going into solution in the 500 cc. of water is not constant.

If we assume then that the Paris green breaks up, and that for a certain amount of copper oxide a corresponding amount of arsenious oxide goes into solution, the figure obtained for soluble arsenious oxide (without taking into consideration the breaking up of the Paris green itself) which we will call the *apparent* per cent. of arsenious oxide, will not represent the *actual* per cent. of arsenious oxide, but a determination of the copper oxide dissolved in the water will have to be made, and after calculating how much arsenious oxide this corresponds to, the resulting figure will be subtracted from the *apparent* per cent. of arsenious oxide, thus leaving the *actual* per cent. of free arsenious oxide in the green.

It is of course possible, even probable, that the arsenious and copper oxides of Paris green do not go into solution in water in the same proportion that they are present in the original compound, but in the present state of our knowledge it seems to be the most plausible assumption that they do.

The determination of copper oxide is made by precipitating an aliquot portion of the 500 cc. of cold water extract with hydro-gen sulphide, filtering, washing and drying the combined sul-

<sup>1</sup> This Journal, 22, 568.

phides of arsenic and copper, burning the precipitate and filter with powdered sulphur, and finally weighing as the mixed oxide and subsulphide of copper. On ten samples of Paris green the following results were obtained:

No.	Apparent per cent. of arsenious oxide extracted.	Per cent. of copper oxide extracted.	Arsenious oxide corresponding to copper oxide extracted.	Actual per cent. of arsenious oxide in Paris Green.
1.....	5.81	0.80	1.50	4.31
2.....	9.69	0.55	1.03	8.66
3.....	4.60	0.70	1.31	3.29
4.....	4.60	0.60	1.12	3.48
5.....	4.11	0.65	1.21	2.90
6.....	3.63	0.50	0.94	2.69
7.....	7.75	1.35	2.53	5.22
8.....	6.54	0.70	1.31	5.23
9.....	10.65	0.45	0.84	9.81
10.....	5.57	0.90	1.69	4.88

J. K. HAYWOOD.

*On Carborundum.*—In a paper on carborundum (carbide of silicon), read at the World's Congress at Chicago in 1893, and published later in this Journal,<sup>1</sup> there appeared in the second paragraph the following statement :

“ It is an American invention, having been discovered by Edward H. Acheson, of Monongahela City, Pa., who carried the invention to commercial success with extraordinary energy in the face of many obstacles.”

As a part of the discussion at the close of the paper, I asked the author if he was aware that an electric furnace precisely similar to the one he had described was fully protected by letters patent issued to Messrs. Eugene H. and Alfred H. Cowles, in 1884. I further asked him whether the author was aware that in 1885, the substance to which had recently been assigned the name carborundum, was made in the Cowles furnace, and that specimens of this material could be found in several museums throughout the country. The author disclaimed any knowledge of such a furnace, or that any such material had been produced prior to that produced by Mr. Acheson.

In the United States Circuit Court of Appeals for the Third Circuit (Judges Dallas, Gray, and Bradford), a decision has

<sup>1</sup> This Journal, 15, 411.