

A PORCELAIN GOOCH CRUCIBLE.

BY DR. G. C. CALDWELL.

The usefulness of the platinum Gooch crucible has long since been fully established. For various reasons some way of carrying the same idea into execution in a cheaper form is desirable.

In 1882 I made some tests of a porcelain Gooch crucible with so much satisfaction, that in my next order to Gerhardt of Bonn I included crucibles of the pattern that I had been using, and they were made for me at the porcelain works. Lately these crucibles are mentioned in Gerhardt's price list. From that time on they have been in constant use by students and others in my laboratory; and this method of filtration finds much more frequent application, particularly in a student laboratory, than if we were dependent on platinum Gooch crucibles only.

Now, when platinum is so distressingly dear, it seems to be especially appropriate that a description of this crucible should be made public, together with an account of a few tests showing its equal applicability with the platinum crucible.

The crucible itself is like an ordinary number six Meissen crucible, except that all but a narrow rim of the bottom is left out. This rim supports a perforated platinum disk which must of course be heavy enough not to spring under the pressure to which it is subjected: on this disk and what is left of the porcelain bottom the asbestos felt is made in the usual manner.

The following results show that a filter made in this way holds its own as to constancy in weight as well as if made in the platinum Gooch.

Platinum Gooch :

Weight after first washing and ignition.....	21.137
“ washing again with 200 c. c. of water.....	21.1368
“ “ “ “ “ “ “ “	21.1368

Porcelain Gooch :

Weight after first washing and ignition	18.0357
“ “ second with 200 c. c. water	18.0358
“ “ third “ “ “ “	18.0358
“ “ fourth “ “ “ “	18.0358

A second filter was made in another crucible:

Weight after first washing and ignition	18.1829
“ “ second “ 200 c. c. water	18.1829
“ “ third “ “ “ “	18.1826
“ “ fourth “ “ “ “	18.1826

A third filter was made:

Weight after first washing, with only about 150 c. c. of water after the welt was fairly made	18.043
Weight after washing with 150 c. c. of water	18.0427
“ “ “ “ “ “ “ “	18.0427
“ “ “ “ “ “ “ “	18.0427

Fourth trial :

Filter first washed with about 400 c. c. of water :

Weight	18.835
Washed again with 150 c. c. of water	18.835

In order to make the test as thorough as possible the drying of the crucible was done over a direct, low flame of the gas burner, and the ignition to full redness was made with the flame playing directly on the filter. The platinum crucible was dried and ignited with the cap on.

Having observed some years ago that an ignition of a precipitate and filter could be made almost as quickly in a porcelain crucible temporarily jacketed with platinum as in a platinum crucible, I applied this idea to the porcelain Gooch crucible, by having a thin jacket spun out for it; this I find very serviceable at times, although since there is no paper filter to be incinerated its use is rarely necessary. The capacity of the number six porcelain crucible is very nearly the same as that of my platinum Gooch; but while the latter with its cap weighs about 25 grms., the platinum jacket for the porcelain crucible weighs but 10.1 grms., and is amply heavy for its purpose,