Gram mol. of bromate per liter.	Bromide formed in cc. of $N/_{200}$ solution from $KBrO_3$.	$NaBrO_3$.	$Ba(BrO_3)_2$.
0.5	1.75	1.73	1.75
0.2	1.55	1.50	1.55
0.1	1.40	1.42	1.37
0.05	1.20	1.20	1.25

Before making a titration to determine the amount of change produced in any particular solution, a blank titration was first made in every case.

I wish to express my thanks to Professors Jones and Wood at whose suggestion this work was undertaken.

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A GAS GENERATOR FOR HYDROGEN SULPHIDE, HYDROGEN AND OTHER GASES.

BY ALLEN P. FORD.

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THE principle of the generator shown in the accompanying sketch is by no means new. The general form of the present apparatus was shown and described[1] by H. G. Schanche. An improved form was described[2] by Augustus E. Knorr, the improvement consisting essentially of a siphon tube which allowed automatic escape of the exhausted acid.

A generator was made in our laboratory after the plan of this improved one, which worked well, but it was found that the water in the wash-bottle would suck back into the calcium chloride jar over night, owing to the absorption of the gas and the consequent creation of a partial vacuum. This, together with the fact that it sometimes did not start up readily after lying idle some time, owing to the accumulation of sediment and crystallized salts, gave considerable annoyance, and the result of the experience and consequent experimenting is the form of apparatus shown herewith.

It needs no detailed description as the cut is self-explanatory. The apparatus is self-sustaining, all being carried on one base with the exception of the small wash-bottle. The automatic overflow for the spent acid is out of the way, a small hole in the

[1] This Journal, 16, 868 (1894).

[2] Ibid. 19, 818 (1897).

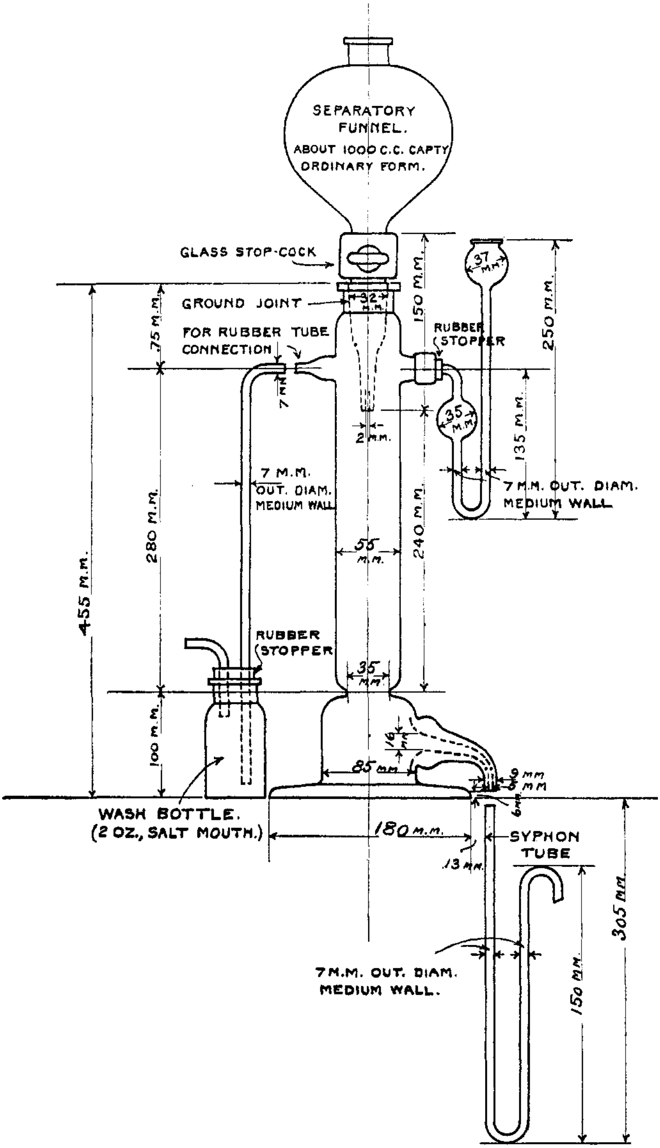
SEPARATORY FUNNEL.
ABOUT 1000 C.C. CAPTY
ORDINARY FORM.
GLASS STOP-COCK
GROUND JOINT
32 M.M.
FOR RUBBER TUBE CONNECTION
RUBBER STOPPER
150 M.M.
250 M.M.
37 M.M.
75 M.M.
7 M.M.
35 M.M.
2 M.M.
135 M.M.
7 M.M. OUT. DIAM. MEDIUM WALL
7 M.M. OUT. DIAM. MEDIUM WALL
455 M.M.
280 M.M.
240 M.M.
55 M.M.
RUBBER STOPPER
35 M.M.
100 M.M.
16 M.M.
85 MM
9 MM
5 MM
6 MM
WASH BOTTLE.
(2 OZ., SALT MOUTH.)
180 M.M.
13 MM.
SYPHON TUBE
305 MM.
150 MM.
7 M.M. OUT. DIAM.
MEDIUM WALL.

table top allowing the siphon tube to be carried underneath, whence it can discharge into any convenient receptacle.

The safety tube connected to the side of the calcium chloride jar opposite the gas outlet is the new feature, and this prevents the water in the wash-bottle from being drawn back, and also allows the apparatus to be washed out and cleaned of any sediment or incrustation of salts, by simply pouring a beaker of water through it.

This apparatus[1] is not particularly recommended for a qualitative class room or similar place where small quantities of hydrogen sulphide are required repeatedly and instantly by turning on the stop-cock, but for a laboratory where a steady flow of gas is required for longer or shorter periods, where the flow must be uniform and where the generator is required to be always in commission whether used every day or once a month, it will be found highly satisfactory.

Since our first home-made one upon which the experimenting was done, we have had three made to order, one in this country and two in Germany. They are well made, sightly pieces of apparatus, and take up very little room.

The calcium, chloride jar will hold three or four pounds of iron sulphide or zinc in broken pieces, and until it needs replenishing the generator will require no attention, whether used much or little, except the occasional filling of the acid reservoir and a possible washing by running some water through it by means of the safety tube. At no time is it necessary to break a joint or take the generator apart in any way, except when recharging with iron sulphide, and even this is very easily done.

It is as easily and quickly started after standing a month as after standing a day, and altogether we have found it the most satisfactory gas generator we have ever used.

THE EATON, COLE AND BURNHAM CO.,
BRIDGEPORT, CONN.

[1] It may hardly be necessary to state that the accuracy of most of the measurements in the drawing are not important, but were taken from a generator in actual use to make the drawing plain. In two or three places, however, these figures should be rather carefully followed, for instance, the distance from the glass stop-cock in the separatory funnel to the outlet of same should not be less than five or six inches, else when the funnel is nearly empty the column of liquid might not be equal to that through which the gas was being forced, with the result that it would escape through the acid in the