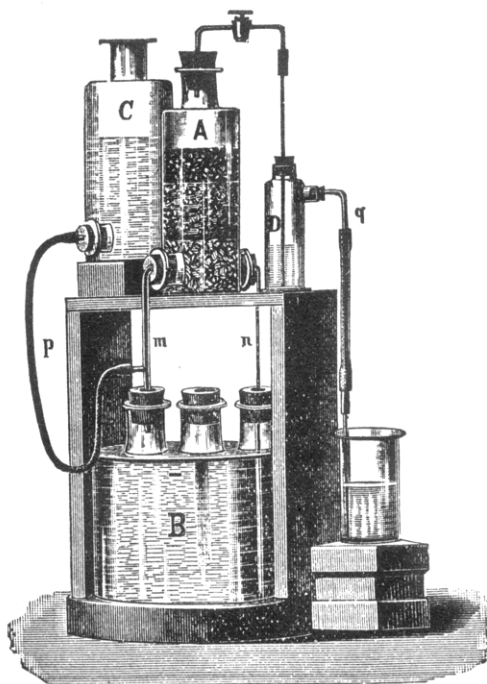


## A NEW HYDROGEN SULPHIDE GENERATOR SPECIALLY ADAPTED FOR USE IN ANALYTICAL LABORATORIES.<sup>1</sup>

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THIS new form of generator has yielded such excellent results, especially in connection with quantitative work, where the need of a constant, easily regulated current of hydrogen sulphide is so often felt, that a detailed description of its construction and handling is now made public.

The arrangement of the different parts is shown in the accompanying cut, in which A, the generator proper, rests upon a wooden support. It



consists of a large wide-necked bottle, provided at the lower part with two tubulures, opposite one another. The bottom is covered with a thick layer of broken glass or porcelain. A three-necked Woulff's bottle, B, of ample size, but low form, is placed beneath the wooden support. The tube n passes from A to the bottom of B. The tube m passes likewise from A to B, but terminates immediately beneath the stopper, while its branch is connected

by means of rubber tubing p, with the tubulure of the movable pressure bottle C. The outlet tube of A, provided with a glass

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cock, enters the wash flask D, from whence gas can be directed at will through q. The middle neck of B can be used for the introduction of a syphon in charging or emptying the apparatus.

The method of using the apparatus is exceedingly simple. A receives a full charge of iron sulphide. B and C are filled with acid, and the latter placed upon a block at the proper elevation. When the cock above A is opened the acid flows into A, the generation of hydrogen sulphide begins, and the gas streams out through the wash bottle D. As ferrous chloride forms in A, its solution on account of its greater specific gravity, sinks continually downward through n, to the bottom of B, while fresh acid enters to take its place. A circulation is thereby established first of strong acid and then of acid containing gradually increasing amounts of ferrous chloride, until the point is reached where nearly the entire stock of acid is changed into ferrous solution. The rapidity of the liberation of the gas can be controlled by raising or lowering C, as well as by the adjustment of the cock in the outlet tube. The current is stopped by lowering C and placing it along side of B, but so that its neck is higher than those of B.

From the above the following advantages of this new apparatus will be easily understood :

1. The current of gas is uniform throughout a given operation, standing under a pressure of 20-30 cm. of water, and capable of being regulated at will.
2. When not in use the pressure is removed and there is no possibility of wasting material either by accident or otherwise.
3. A practically complete utilization of the acid employed is attained.
4. The parts of the apparatus are simple and easy to replace in case of breakage.

It is, of course, evident that the apparatus can be charged with marble or zinc and used to generate carbon dioxide or hydrogen under the same advantageous conditions.

The complete apparatus is constructed in a satisfactory manner by the well-known instrument manufacturers, Max Kaehler and Martini, of Berlin.