

(3) The balance between the non-proteins present in the gluten and the loss of proteins in washing, makes gluten determinations agree roughly with total proteins calculated from total nitrogen, but they will usually fall below with whole wheat and above with flours.

(4) The amount of total proteins present in gluten is about 15 per cent. less than the sum of the gliadin and glutenin determined by extraction of the wheat, and the loss of proteins in washing out gluten is more than equal to the salt solution-soluble proteins. Therefore, the loss of proteins, in the determination of gluten, is at the expense of gliadin or glutenin, the true gluten proteins of wheat.

(5) On account of these losses and errors it would seem that the determination of gluten is not able to yield any information that cannot be gained either from the determination of total proteins or that of the alcohol-soluble and insoluble proteins.

NOTE.

Two New Weighing-bottles.—The weighing-bottles described were devised by the writer some time ago and have been found useful by some of his colleagues and himself. The advantages

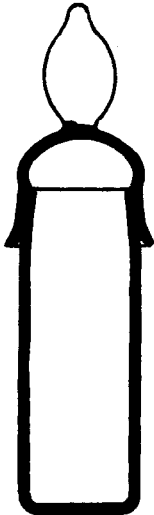


Fig. 1.

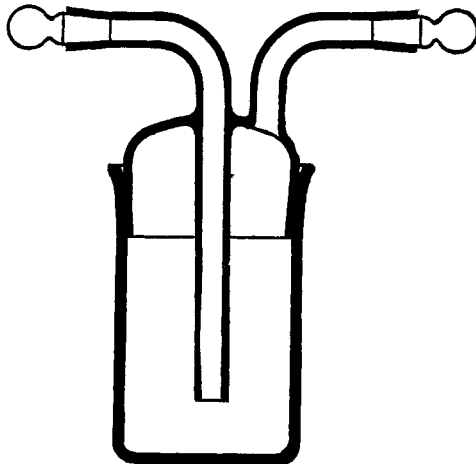


Fig. 2.

of a weighing-bottle with a light cap stopper (Fig. 1) ground on outside are various. In weighing by difference nothing can stick to the ground surfaces, and hence several portions can be weighed out successively without the ground joint having to be cleaned, as is necessary with the ordinary form of stopper. This is of particular advantage in the case of hygroscopic substances, and also prevents the stopper from sticking. When weighing a filter, this can project up to the top of the weighing-bottle and completely fill it. Further, no dust can accumulate between the ground surfaces, and the bottle is easily wiped clean. This weighing-bottle may be obtained in various sizes from C. Desaga in Heidelberg, and from Messrs. A. Gallenkamp & Co., and Messrs. Muller, Orme & Co., in London.

The second kind of weighing-bottle (Fig. 2) is of use in drying substances to constant weight in a current of gas, or in determining water of crystallization, etc. The bottle is heated to the desired temperature in a small air-bath, formed of a large porcelain crucible covered with a piece of asbestos board suitably perforated, and a current of dry gas, if necessary, hydrogen or nitrogen is passed through. These little ground-in stoppers to the gas entry and exit tubes close the bottle tightly and are very convenient. They were introduced by Dr. R. J. Seligman, and are also exceedingly useful for Geissler's potash bulbs, and for calcium chloride drying tubes, and as the ground joint is inside, there is no danger of bits of rubber tubing adhering to the outside of the glass tubes.

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NEW BOOKS.

THEORIEN DER CHEMIE . . . VON SVANTE ARRHENIUS . . . UEBERSATZT VON ALEXIS FINKENSTEIN Leipzig 1906

This book of VII + 177 octavo pages contains a translation of a course of lectures delivered at the University of California in the summer of 1904. The author had long desired to prepare an account of the development of chemical theories, moved thereto by the fact that recent additions to the science are sometimes regarded, both by their adherents and by their opponents, as something entirely new, with no root or germ in the past; as being the more admirable the more independent they are of the older chemical theories. He hopes to show that in the newer chapters