to remain active, which under the ordinary conditions of prescribing is extremely doubtful.

Trypsin is indeed more stable in presence of acids than was formerly supposed, as several series of investigations from this laboratory have shown. But the practical conditions under which it can pass the stomach have to be carefully observed, and when administered at all this should be with the fewest possible complicating conditions. A few milligrammes of trypsin can have at best but a vanishing effect. Large doses given at the right time may reasonably be expected to have therapeutic value, and prescribing should naturally have this end in view. As made at the present time, the pancreatins and their various combinations have no proper place in rational medicine, as proteolytic agents. There is here great room for improvement.

ASSAY OF GLYCERIN.

A BELATED CORRECTION.

BY A. B. LYONS.

Three years ago F. T. Bradt read a paper before the American Pharmaceutical Association, published in their JOURNAL, January 1915, proposing a simplified form of the Hehner assay for glycerol. Hehner had employed as an oxidizing agent a volumetric solution of potassium dichromate made of such strength that one mil corresponded to exactly 0.01 Gm. of glycerol. It contained therefore in each liter "about" 74.86 Gm. [theoretically 74.567 Gm. (O = 16)] and 150 mils of strong sulfuric acid. The strength of the solution was adjusted by titration against a volumetric solution of ferrous ammonium sulfate.

The assay was made by placing in a clean beaker an accurately weighed portion of the sample (about 0.4 Gm.), adding 50 mils of the volumetric dichromate solution together with about 15 mils of strong sulfuric acid, covering the beaker with a watch glass and heating two hours on a boiling water-bath. The excess of dichromate was then determined in the cooled solution by titration with a volumetric solution of ferrous ammonium sulphate, after which calculating of the amount of glycerol was a simple matter.

Mr. Bradt's suggestion was to use for the oxidizing agent the official potassium dichromate V. S., of which one mil will correspond with 0.00065757 Gm. of glycerol. The excess of dichromate was determined by adding to the solution potassium iodide and titrating the iodine set free with sodium thiosulphate V. S. The directions for the assay are in detail: weigh out accurately five grammes of the sample of glycerin, dilute with distilled water to exactly one liter, and take for titration exactly five mils of the solution (equivalent to 25 milligrammes of the sample). Add 50 mils of tenth-normal potassium dichromate V. S. and 25 mils of strong sulphuric acid and heat in a suitable flask twenty minutes in a steam bath. Cool, add 1 Gm. potassium iodide (free from iodate); after standing ten minutes dilute with 100 mils of water and titrate the liberated iodine with tenth-normal sodium thiosulphate V. S.

Subtract the number of mils of the thiosulphate solution required from 50, multiply the remainder by 2.6303 for percentage of glycerol in the sample. (This

factor = 0.65757 mg. ÷ 25 × 100.) Thus, if 13.5 mils of the thiosulphate V. S. were required, 50 — 13.5 = 36.5 and 36.5 × 2.6303 = 96.006, the required percent of glycerol.

It would not be necessary to go into this detail were it not that an unfortunate error occurred in Mr. Bradt's paper. The directions there were to weigh out five grammes of the glycerin and dilute to 100 mils instead of 1000 mils. Five mils of this diluted glycerin, it was stated, were equivalent to 25 mg. of the original sample. Plainly there was a discrepancy, but whether it was the 100 mils or the 25 mg. that was in error did not appear, and in absence of any statement in the paper about the quantity of glycerol corresponding with 1 mil. of deci-normal potassium dichromate, one could not safely hazard a correction.

An abstract of the paper was published in the *Chemical Abstracts of the American Chemical Society*, in which the abstractor ventured to correct the obvious error by changing 25 mg. to 250 mg. Mathematically he was right, but any one attempting to use the assay process would have condemned it offhand or else wasted time in studying out the reason why the process would not work. The same would have been true, of course, if any one had attempted to follow the original directions.

Another abstractor for the Year Book of the American Pharmaceutical Association (Vol. IV, p. 271) quoted Bradt's directions as given in his paper, without noticing the discrepancy.

The assay as applied to samples of glycerin free from readily oxidizable impurities is trustworthy, in spite of the very small quantity of material used, and is very easily and quickly made. I incline to think that it can also be used with suitable modification for determining the glyceryl of glycerophosphates. That, however, is another story.

A NEW REAGENT FOR ALDEHYDES.

Fazi, in an Italian contemporary, gives the details of a new reagent for aldehydes, which allows the detection of the most minute quantities of a number of these compounds. It will detect 0.0078 mg. of benzaldehyde, 0.019 mg. of vanillin, or 0.006 mg. of furfural. It will not, however, effect more than a group separation so that it can hardly be said to detect given aldehydes.

The reaction is as follows: To the aldehyde in chloroform solution, two or three drops of a chloroformic solution of acenaphthene are added and then with care 1 Cc. of concentrated sulphuric acid. A green ring changing to red-violet is formed in the presence of the aldehyde. If the tube is shaken, the sulphuric acid is colored green and then red-violet.

This reaction is sufficient to discriminate between aromatic and aliphatic aldehydes since the latter do not give any coloration. Formic and acetic aldehydes, for example, give white precipitates which consist of condensation products. Aldoses and carbohydrates containing an aldehyde group which yield furfural or aromatic aldehydes on treatment with cold concentrated sulphuric acid also yield the reaction. In the case of lactose (sugar of milk) the green color appears at the end of a few minutes and passes to violet in about 40 minutes. Maltose reacts more slowly than lactose.—M. in *Jour. Ind. and Eng. Chem.*, Sept. 1, 1917, p. 906.