DISCUSSION OF RESULTS.

The correlation of the data included in this investigation with the beforementioned work of Krantz and Gordon[1] indicates that with emulsions prepared with acacia, the buffering action of acacia upon acid or alkali added to the emulsion influences the stability of the emulsion. Acacia being the potassium, calcium and magnesium salts of a weak acid, namely, arabic acid, one might expect its buffer capacity to be more effective in the neutralization of acids than the neutralization of alkalies. An examination of Fig. 1 shows this to be the case, on account of the abruptness of the curve on the alkaline side p_H 10.5 and the gradient curvature on the acid side of the p_H scale. This information agrees with the findings of Gordon and the author in the stability of emulsions prepared with acacia, *i. e.*, the instability begins on the alkaline side at a lesser concentration of alkali than it does on the acid side with a corresponding concentration of acid. The alkaline concentration, where instability begins, lies between $\frac{N}{10^3}$ and $\frac{N}{10^4}$ sodium hydroxide solution, whereas with hydrochloric acid a concentration of $\frac{N}{10^2}$ is required to produce relative instability.

Dilution with water was shown to have little influence upon the p_H of acacia solutions. The buffering effect of tragacanth does seem to play as important a rôle in the determination of emulsion-stability as it does with acacia. Gordon and the author found tragacanth emulsions prepared with an external phase of about p_H 2 to be most stable, yet tragacanth exerts a considerable buffer capacity between p_H 3.0 and 10.00. In the case of the emulsions prepared with tragacanth, the stability of the gel which the gum forms with water seems to be the main criterion of emulsion-stability. The acid gels p_H 1.5 to 2.5 were found to be most stable, as recorded in the previous investigation of Gordon and the author.

CONCLUSIONS.

1. The buffer capacities of acacia and tragacanth have been studied.
2. The effect of dilution on the p_H of acacia solutions has been determined. The Van Slyke "β" for acacia in 0.1 M solution at p_H 3 has been found to be 0.034.
3. An explanation correlating the buffer capacity of acacia and the stability of emulsions prepared with this substance has been proposed.

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ESTIMATION OF NITROGLYCERIN SOLUTION D. A. B. VI.

The conventional method of "D. A. B. VI," based on the saponification of the nitroglycerin, gives as a rule too high values. The addition of H_2O_2 does not seem advantageous, and the process is unsuitable in practice. For ordinary checking it is sufficient to estimate the dry residue of 10-Gm. solution, using a Soxhlet flask, and drying over $CaCl_2$. One can also fall back on the test of "Pharm. Netherl. V.;" 10 cc. of nitroglycerin solution are mixed with 15 cc. H_2O and warmed to just over 35° C., when a clear solution results. When carefully cooled the mixture becomes turbid between 29° and 34° C.—C. Brumming (*Apoth. Ztg.*, 43, 81, 1235; through *Pharm. J.* for March 16, 1929.