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The availability of certain indicators in the determination of gastric acidity.

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A comparative study was made of certain indicators which have been used in the titration of gastric juice for free and total acidity and for the colorimetric determination of the H ion concentration of the same. The findings apply particularly to titrations where small amounts of gastric juice are available and many determinations must be carried out.

Phenolphthalein was the most satisfactory indicator for total acidity in spite of the fact that values obtained with it are slightly high, because the end point is definite and speed and accuracy are attainable with its use while the use of litmus or alizarin requires more time and the end points cannot be determined with accuracy.

For the titration of free acidity the iodometric method was found most useful. In the higher acidities dimethylaminoazobenzene may be used with an equal degree of accuracy and may be preferred where much starch is present. Congo red possessed no advantages over the foregoing in the determination of free acid but gives high results and the end point is not sufficiently sharp.

Colorimetric H ion concentration determinations when applied to gastric contents containing varying quantities of protein and salts have so far proven inaccurate and unavailable for following changes in reaction during digestion. Better results have been obtained after partial removal of protein by short dialysis through collodion sacs according to a procedure similar to that used by Levy, Rowntree, and Marriott¹ for blood. The use of adsorbents for protein and substitutive colloid in standards did not give completely satisfactory comparative results, though attempts are still being made in this direction.

¹ Levy, Rowntree, and Marriott, *Arch. Int. Med.*, 16, 389, 1915.