Substances which have a smaller molecular structure than the whole proteins and are more diffusible, can react with cells without the intervention of antibodies. The determining criterion, therefore, upon which it depends whether a substance is antigenic or, in other words, an antibody former, is, therefore, its ability or inability to diffuse.

In the case of substances which can pass through membranes to some degree, antibody formation is not necessary, and hypersusceptibility may depend upon changes which cannot be measured as we can measure antibodies.

Also, because of the diffusible nature of these substances, the reactions may be intracellular and this would account for the later inflammatory reactions due to definite cell injury.

60 (1642)

A modification of Folin's uric acid method.

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In an effort to improve Folin's uric acid reagent it was found that by dialyzing under special conditions Folin's solution and evaporating the solution so dialyzed a superior reagent was obtained. A similar, though not identical, reagent was prepared by boiling down Folin's solution and filtering off the precipitate. When mixed in the proper proportions these two substances yield a reagent superior to Folin's in the following respects.

1. There is no precipitate such as is frequently encountered with Folin's solution.

2. The color developed with a given quantity of uric acid is about four and a half times as intense as that developed in Folin's method.

3. The color does not fade over a period of many hours.

Since this work was done we have learned of Wu's isolation of the pure ammonium phospho-18-tungstate.[1] This substance was prepared by his method and its chromogenic powers were found to be the same as those of our salt. Like the latter the

[1] H. Wu, Jour. Biol. Chem. 1920, xliv, 189.

pure ammonium salt gives a better color in the absence Na_2CO_3 and sulphite lessens the color markedly, facts which explain why Wu apparently did not recognize that his salt under proper conditions gave more color than Folin's original solution. Our method is simpler and yields more usable material than Wu's method would if used for the same purpose.

The actual method of blood analysis is somewhat modified. No sodium carbonate is used, the cyanide furnishing the requisite alkalinity. Benedict's standard must be used. The cyanide must be measured to an accuracy of 0.1 c.c.

ABSTRACTS OF THE COMMUNICATIONS,

PACIFIC COAST BRANCH.

Twenty-seventh meeting.

San Francisco, California, January 12, 1921.

61 (1643)

Colorimetric determination of hydrogen ion concentration by means of a double-wedge comparator.

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In a former paper[2] a method was outlined for determining hydrogen ion concentration colorimetrically without the use of buffer solutions, and data for making such determinations for P_H values between 6.7 and 8.1 were given, using phenolsulphonephthalein as an indicator. The method consisted in the partition of a constant amount of indicator solution between pairs of test tubes of equal caliber, one tube of each pair containing 5 c.c. of weak acid, and the other tube 5 c.c. of weak base. When such pairs of tubes are viewed by transmitted light in the comparator of Hurwitz, Meyer and Ostenberg a series of colors is observed

[2] Barnett, G. D. and Chapman, H. S., 1918, "Colorimetric determination of reaction of bacteriologic mediums and other fluids," *Jour. Amer. Med. Assoc.*, lxx, 1062.