acetic acid shows a decrease in these experiments, while the β-hydroxybutyric acid only fails to show the "expected increase" seems to be in accordance with this view.

The experiment shows that glucose is absorbed rapidly by rectum, and is taken into the blood in sufficient quantities to decrease the excretion of acetone produced by a diet high in fat.

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## Effect of dilution on the precipitation reaction for syphilis proposed by author.

By R. L. KAHN.

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One of the important differences between the precipitation reactions of Meinicke, Sachs and Georgi, Dryer and Ward and that proposed by the author[1,2] is that in the last reaction, the amount of normal salt solution is reduced to a minimum. It was early observed, when adding given amounts of serum and antigen to a series of tubes and subsequently adding increasing amounts of normal salt solution to that series, that the degree of

TABLE SHOWING DELAYING EFFECT OF PHYSIOLOGICAL SALT SOLUTION ON PRECIPITATION REACTION FOR SYPHILIS PROPOSED BY AUTHOR.

| | Tube No. | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Syphilitic serum, c.c. | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Antigen, c.c. | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 |
| Salt solution, c.c. | .... | 0.1 | 0.2 | 0.4 | 0.6 | 0.8 |
| Results after 1 hour incubation in water bath | Marked Precipitation. | Moderate Precipitation. | Doubtful Precipitation. | Negative. | Negative. | Negative. |

[1] PROC. SOC. EXPER. BIOL. AND MED., 1922, xix, 182. The preparation of antigen is briefly described in this paper. It should be cholesterinized to 0.4 per cent. before diluting with salt solution.

[2] *Arch. Derm. and Syphil.*, 1922, v.

precipitation following incubation is inversely proportional to the amount of salt solution added. The tube, for example, which contains serum and antigen without salt solution may show marked precipitation after 1 hour incubation; the one which contains 0.2 c.c. may show moderate precipitation while the one which contains 0.4 c.c. of salt solution may show no precipitation after the same period of incubation. The above table illustrates this point.

The question presented itself whether the delay in precipitation in those tubes which received salt solution as indicated in the table was due to sodium chloride or the element of dilution. A series of experiments was thereupon carried out employing distilled water, 0.425 per cent. and 2 per cent. sodium chloride solutions and the regular antigen mixture employed in the tests. The results in each case were similar to that obtained with normal salt solution, indicating that the delaying effect is produced by the dilution element and not by the sodium chloride. Of particular interest is the finding that the addition of increasing amounts of antigen exerts the same retarding effect on precipitation as, for example, distilled water or normal salt solution.

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## Relation between serum and antigen in precipitation reaction for syphilis proposed by author.

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The optimum relation between serum and antigen in the precipitation test for syphilis proposed by the author has been observed to be in the neighborhood of 4:1. On the basis of this relation one may employ 0.4, 0.3, 0.2 or 0.1 c.c. of serum with 0.1, 0.075, 0.05 or 0.025 c.c. of antigen respectively with similar results. This relation holds true also with smaller quantities than 0.1 c.c. Thus 0.04 c.c. of serum with 0.01 c.c. of antigen has been found to give results comparable with 0.4 c.c. of serum