

R. O. NEUMANN.—The experiments carried out by the writer on himself consisted of a preliminary period of 4 days, during which various observations were taken; then 10 days with daily doses of 3 grammes of borax, followed by 4 days without borax; and concluding with daily doses of 5 grammes of borax for 3 days. During the first period nitrogen equilibrium existed; the secretion of nitrogen decreased during the first borax treatment, also in the intermediate 4 days, but was not further diminished by the larger doses of borax. His weight fell 1,200 grammes in seven days of the borax period. The flow of urine was somewhat increased, and boric acid could be detected for 18 days after the last dose of borax had been taken.

A. HEFFTER made four series of experiments on himself, alternately fasting for 18 to 20 hours, and then feeding on milk and eggs for 48 hours. In two of the series he used food without borax; in the other two he used 1 and 4 grammes borax daily. The boric acid was found to increase the solids and nitrogen in the excreta, probably due to the diminished absorption of albuminoids as a result of the injurious effect of the boric acid on the mucous membrane of the intestines. The conclusion is that boric acid is not without objection when used as a preservative.

G. SOUTAG found by experiment that 3-gramme doses of boric acid required 5, 8 and 9 days, respectively, for elimination by the urine, in the cases of three healthy individuals.

A. WEITZEL.—Experiments on the coagulation of milk by rennet, in presence of various substances, as follows:—Group (1) Alkaline: Borax, sodium hydroxide, sodium carbonate and sodium bi-carbonate. (2) Salts capable of precipitating lime: Sodium oxalate, sodium fluoride and sodium oleate. (3) Other salts having an alkaline reaction: Sodium sulphite, salicylate, benzoate, propionate, acetate and formate. (4) Neutral salts: Sodium chloride, lithium chloride, sodium nitrate, perchlorate, tartrate, sulphate, ammonium sulphate and magnesium sulphate. (5) Acid salts: Sodium hydrogen tartrate, sodium hydrogen sulphate and sodium persulphate. (6) Acids: Boric, carbon dioxide, oxalic, benzoic, salicylic, protocatechuic and gallic. (7) Formaldehyde, saccharin and cane sugar.

The following results were obtained:—

(1) Borax retarded the coagulation when present in only small quantities (0.01 to 0.04 per cent), and the amounts usually employed (1 gramme per litre of milk) stopped the action of the rennet altogether. All other alkaline salts acted similarly.

(2) Coagulation was checked by those salts which precipitated the lime compounds. When the reaction became alkaline, the influence of alkalinity also showed itself.

(3) The neutral salts generally had a retarding action. Some (sodium and lithium chloride), principally in concentrated solution, more feebly when present in small quantities. Magnesium sulphate, in both concentrated and dilute solution, had considerable influence.

(4) Small quantities of the acids aided the coagulation. After carbon dioxide, boric acid had the most feeble action. The acid salts acted in the same manner as the acids.

(5) The action of formaldehyde was so powerful that it must be considered as a direct poison to the rennet enzyme. Saccharin in small quantity had little influence, but stronger solutions greatly hindered the coagulation. Sugar, up to 20 per cent of the weight of the milk, had no action.

E. POLENSKE showed experimentally that fresh and smoked hams, when packed in borax, dry, for periods of three and four weeks, absorbed into the interior of the ham quantities of borax varying from 0.076 to 4.05 per cent.

L. PORTES AND A. DESNOULIERES, (Ann. Chim. Anal. Appl. 401) "have found that, by the examination of fresh strawberries, that salicylic acid, probably as the methyl ester, is a normal constituent of this fruit. The amount in the fresh berries is about 1 mgr. per kilog. (i.e. about 1 part per million or 0.0001 per cent.)"

E. O. V. LIPPMAN (Chem. Zeit. 1902-465) found a deposit in a vacuum pan, which had been used for concentrating lemon juice. On analysis this gave about 0.5 per cent of boric acid. Various commercial samples of lemon juice were then examined, as well as lemons and oranges, and in nearly every instance strong boric acid reactions were obtained. In the lemons, boric acid was detected both in the juice and in the rind.