

**BACTERIOLOGICAL, PHYSIOLOGICAL, ETC.**

**Detection and Estimation of Hydrocyanic Acid in Beans. L. Guignard.** (*Ann. Falsific.*, 1916, **9**, 301-305.)—Burmah beans may be imported into France provided that the consignment, on analysis, does not show a higher hydrocyanic acid content than 0.02 per cent. The beans, which belong to the *Phaseolus lunatus* species, are of two kinds, red and white, and the white beans are frequently used for food. The author has found 0.025 per cent. of hydrocyanic acid in certain samples of the dried beans. The method employed for detecting the presence of hydrocyanic acid consisted in mixing the powdered bean with five times its weight of water in a flask and suspending in the upper part of the flask a strip of paper which had been dipped in solution containing picric acid and an excess of sodium carbonate. An orange-red colour developed on the paper within twelve hours if the bean contained a hydrocyanic glucoside. The quantity of hydrocyanic acid was estimated by macerating 20 grms. of the powdered bean with water for twelve hours, then submitting the mixture to steam distillation, and collecting the distillate (125 c.c.) in a receiver containing dilute ammonia. The distillate was then titrated with  $\frac{N}{10}$  silver nitrate solution, using potassium iodide solution as the indicator.

W. P. S.

**Salicylic Acid Reaction of Soya Beans.** H. C. Brill. (*Philipp. J. Sci.*, 1916, **11**, 81-89.)—All the samples of Japanese soya beans tested gave the ferric chloride colour test for salicylic acid. American, Chinese, and native beans gave either negative or faintly positive tests with the same reagent. All samples of soya beans gave a negative result for salicylic acid with the Millon reagent and with the Jorissen reagent (see ANALYST, 1910, **35**, 252 and 253). The reacting compound in the beans has all the ordinary test properties of salicylic acid, but is undoubtedly similar to the maltol of Brand (*Ber.*, 1894, **27**, 806). Jorissen's reagent should therefore be employed in testing beans for salicylic acid. H. F. E. H.

**Resistance of Non-Sporing Bacteria in Milk to the Action of Heat.** C. Gorini. (*Rend. R. Institut. Lombardo Sci. Lettere*, 1915, **48**, 956-961; through *Int. Rev. Sci. and Prac. of Agriculture*, 1916, **7**, 740.)—Experiments showed that the presence of non-sporing bacteria in milk which had been pasteurised was due to the formation of a protective covering of casein round the bacteria, this covering probably being caused by the action of the bacteria themselves, before or during the sterilising process. Thus the explanation of the apparent resistance of non-sporing bacteria to the action of heat is rendered more comprehensible. In none of the experiments was any case found of resistance to heat above 85° C., and no bacterium, even when artificially covered with casein, ever survived a temperature of 90° C., whilst under normal conditions the bacteria resisted sterilisation at 100° C. As the surviving bacteria, however, were localised in small clots of casein and had acid-coagulating properties, the difference is attributed by the author to the unavoidable difference between natural and artificial conditions, which do not affect the theory that the thermo-resistance is due to the protective layer of casein. W. P. S.

**Yeast Preparation for Use in the Estimation of Crystallisable Sugar by Inversion.** H. Pellet. (*Procès-Verbaux de l'Ass. d. Chim. de Sucre et d. Dist.*, 1915, **33**, Bull. 1-3, 12-13; through *Int. Rev. Sci. and Prac. of Agriculture*, 1916, **4**, 592.)—A preparation of yeast which is very active and retains its inverting capacity for a prolonged period may be made by the addition of sodium salicylate at the rate of 0.2 gm. of salicylate per 3 grms. of yeast, which is thereby liquefied almost instantaneously. Yeast may be thus treated in quantity and when required for use diluted in the proportion of 30 grms. in 100 c.c.; 10 c.c. equivalent to 3 grms. of yeast being used per 50 c.c. of sugar solution (neutral and free from lead). Inversion is complete in half an hour at 55° C., the ordinary Clerget formula being employed to calculate the cane-sugar, using the constant  $141.8 - \frac{1}{2}t$  in place of the 144 (Clerget) or 142.7 (German formula and method). H. F. E. H.