JOHNSON (W.)

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THE USE OF THE AUTOCLAVE FOR STERILIZING NUTRIENT GELATIN.

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AN impression seems to exist in many bacteriologic laboratories that the sterilization of nutrient gelatin by means of the autoclave is impracticable, owing to the tendency of this medium to lose its power of setting firmly when exposed to a temperature above the boiling-point of water. Our experience has shown the contrary to be the case, and the results obtained by a single sterilization in the autoclave have been fully as satisfactory as those obtained by fractional sterilization at 100° C. on successive days, so that we now employ the autoclave by preference to avoid delay and uncertainty. The steam-pressure employed is 3/4 of one atmosphere (equal to 115° C.), saturated steam for fifteen minutes, after the gelatin has been filtered and filled into tubes.

In a series of comparative tests in which half of the nutrient medium was prepared by fractional sterilization in an Arnold sterilizer, that prepared in the autoclave was equally transparent, retained the desired degree of alkalinity (usually 2 per cent. acid to phenolphthalein), and remained firm in plates or roll-tubes at a temperature of from 24° to 25° C. In no case have we had any spontaneous growth in the tubes after this sterilization.

We claim no priority for these observations, as the autoclave at 105° C. seems to have been employed for some years in several French laboratories for sterilizing gelatin,[1] though this fact does not appear to have become as generally known as it might be. In the laboratory of the Board of Health of the Province of Quebec attention was first attracted by the fact that some gelatin, sterilized in the autoclave through a mistake, retained its power of setting. In our experience a temperature of 105° C. has not always been sufficient to insure perfect sterilization.

With reference to the temperature we employ, it may be well to mention that the test-tubes and small bottles which we use are made of very thick glass, so that the heat penetrates slowly. In working with thinner ones a lower pressure or a shorter time may be found to give the best result. We have employed gelatin giving a firm jelly, as considerable difference exists between the different brands in respect to their melting-points.