

that the slow fermentation was not due to any restraining effect upon growth of the culture. Fermentation occurred after the peak of the growth curve had been passed.

The behavior of several of the bacteria deserves a special word of comment. The 3 strains of *Proteus vulgaris* all failed to ferment *l*-arabinose but promptly used *d*-arabinose, and seemed to be unique in this respect. This is essentially similar to the finding of Moltke<sup>3</sup> who reported in his monograph on the *Proteus* group that none of his cultures fermented *l*-arabinose but that all of them fermented *d*-arabinose. It is interesting that such vigorous fermenting types as *Bacterium coli* and *Bact. aerogenes*, both of which are able to break down many varied types of sugars, experienced some difficulty in handling *d*-arabinose. *Salmonella cholerae-suis* is unable to ferment *l*-arabinose and this characteristic has been used as one of the means of separating it from other members of the *Salmonella*, or paratyphoid, group. It is interesting that this organism produced a delayed fermentation of *d*-arabinose and thus its behavior toward this form of arabinose is similar to that of the other members of the *Salmonella* group.

A comparison of the 2 forms of arabinose, together with a consideration of the behavior of the organisms toward other pentoses and hexoses, fails to afford an explanation of the results. It is planned to investigate the intermediate metabolism of these sugars in more detail.

### 6433

#### Anomalous Lacrimation.

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A medical student, A. B. B., has been puzzled because during defecation and sometimes during urination, he has noticed a copious flow of tears. Inquiry has indicated that the experience was at least relatively rare, and he has been unable to find reference to this response in the literature.

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<sup>3</sup> Moltke, Contributions to the characterization and systematic classification of *Bac. proteus vulgaris*. Levin and Munksgaard, Copenhagen, 1927.

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He was persuaded to record carefully the intensity of the response in relation to the situation which elicited it. He has made 508 observations during 94 days, the salient facts of which are detailed below.

A "drop" is defined as the amount of fluid necessary to fill the eye and run over onto the cheek. If enough fluid was produced to cause one drop to fall off of the cheek, this was considered 2 drops, or if more than one drop ran off, each was added.

It appears that defecation is a much more effective stimulus (2.2 drops, average of 86 observations) than urination alone (0.01 drops, average of 255 observations) or urination during a desire to defecate (0.4 drops, average of 114 observations), that performing the 2 acts at the same time (2.3 drops, average of 57 observations) does not enhance the response to as great a degree as does defecation with effort to retain urine (3.7 drops, average of 7 observations). The passage of watery feces is much less effective as a stimulus to lacrimation (0.6 drops, average of 5 observations) than is the passage of normal feces. In addition it may be remarked that straining alone has no effect. Warm soap suds enemata and mechanical stretching of the anal sphincter are also without effect.

That the response involves the normal nervous outflow (parasympathetic) is indicated by the fact that the lacrimatory response is eliminated as a result of a moderate dose of atropine.

#### 6434

### Treatment of Pin Worm (*Enterobius vermicularis*) Infestation with Hexylresorcinol.\*

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The removal of *Enterobius vermicularis* is especially difficult because its life span of 3-4 weeks is spent in migrating down the small and large intestines. Because of this migration, treatment must be directed against the young worms in the small intestine as well as the gravid females in the large intestine. That the eggs are infective when passed in the anal region by the female worms adds to the difficulty, and the possibility of reinfestation during treatment can-

\* The funds for carrying out this work were given by the International Health Division of the Rockefeller Foundation.

† Received for publication July 29, 1932.—Editor.