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Relation of the gentian violet reaction to dilution of implanted suspension.

By JOHN W. CHURCHMAN.

[*From the Laboratory of Bacteriology, Cornell Medical School, New York City.*]

It has been stated above that if increasingly weak dilutions of suspension of a Gram negative organism (*B. coli*) be stroked on a divided gentian violet plate relatively few colonies appear on the gentian violet side of the plate and, when very weak dilutions are used, none at all. It has been shown that this is, in part, due to the fact that in a suspension of a Gram negative organism by no means all, indeed, only a small proportion of the organisms may be gentian negative.

This can hardly, however, be the whole explanation. For if the experiment be repeated, using an emulsion of organisms which have already grown in the presence of gentian violet and have thus proven their resistance to the dye, a similar quantitative phenomenon is observed; far fewer colonies appear on the gentian violet agar than on the plain agar when weak dilutions of the suspension are stroked across the plate. The explanation of this fact is not clear; it may be due to some sort of communal property which enables bacteria, instead of pursuing individual careers, to aid each other in their growth and thus to accomplish in large groups what they cannot accomplish singly.

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The effect of repeated re-inoculations of gentian violet agar with gentian positive organisms.

By JOHN W. CHURCHMAN.

[*From the Laboratory of Bacteriology, Cornell Medical School, New York City.*]

If a divided gentian violet plate be stroked with a thick suspension of the Gram positive and gentian positive *B. subtilis* no