(*c*) Thick suspension of the Gram negative *B. coli* grow equally well on the two halves of the plate.

(*d*) If very weak dilutions of suspension of the Gram negative *B. coli* be stroked across a divided plate a few colonies appear on the plain agar, none at all on the gentian violet agar.

(*e*) From a suspension of the Gram negative *B. coli*, a gentian negative and a gentian positive strain can be cultivated.

(*f*) A thick suspension of the gentian negative strain of *B. coli* will grow equally well on the plain agar and on the gentian violet agar; if a weak dilution of the suspension be used a few colonies will appear on the plain agar, none at all on the gentian violet agar.

(*g*) If a thick suspension of the gentian positive strain of *B. coli* be stroked across the plate no growth whatever occurs on the gentian agar.

These observations indicate a number of the pitfalls which beset those who attempt to transfer laboratory observations into therapeutics. No conclusion as to the probable effect of a selective therapeutic agent is justified unless the experiments on which this conclusion is based have taken into consideration the quantities of bacteria used.

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The communal activity of bacteria.

By JOHN W. CHURCHMAN.

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

It has been shown above that, while *B. coli* like—most of the gram negative organisms—is apparently uninfluenced in growth by gentian violet, a careful study of thick suspension will demonstrate the presence of many individuals which *are* susceptible to the dye.

The isolation of a strain of *B. coli* entirely fast to gentian violet—that is to say, containing no individuals susceptible to the bacteriostatic effects of the dye—has made it possible to study quantitatively the reaction between this bacteriostatic agent

and bacteria, without encountering the disturbing factor usually met in such studies and caused by the variability of the susceptibility of the individual organisms to the chemical substance under examination. This strain of *B. coli* had been isolated from a single colony growing on gentian violet agar and had been kept growing on gentian violet agar by frequent transplants over a period of several weeks. Every individual had therefore proven its ability to grow in the presence of the dye by actually having done so.

Working with such a culture it is found that, though large inoculations of gentian violet media produce as heavy growths as in plain media and that the dye therefore seems to have no inhibitory effect, single cell transplantations (by the method of Barbour) never grow. Nor does growth occur if small groups (under 30) are transplanted. *This would indicate that bacteria do not, as is commonly supposed, act as isolated individuals; they possess the power, in numbers, of accomplishing effects which, alone, they are incapable of. The nature of this community of action it is at present impossible even to guess at.*

13 (1595)

Resistance of hepatic tissues to local anemia.

By **LOREN R. CHANDLER** (by invitation).

[*From the Laboratory of Experimental Pathology, Stanford University, California.*]

If a temporary renal anemia of two hours' duration is produced by placing a ligature about the renal artery of a rabbit, and the rabbit is killed from one to four days later, histological study will invariably show necrosis of practically the entire cortical tubular epithelium, with few if any changes in the glomerular and interstitial elements. This method of producing epithelial necrosis, with the minimum amount of injury to other elements, is now being used in this laboratory for a study of epithelial regeneration and the pathology of renal excretion.

As a preliminary to a similar study of hepatic function and regeneration, tests were made of the effects of temporary local