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The isolation of gentian positive individuals from a suspension of a gentian negative organism (b. coli).

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If divided gentian violet plates be stroked with increasingly weak dilutions of a suspension of the Gram negative and gentian negative *B. coli*, the organism will grow equally well on the two halves of the plate in the strokes made with strong dilutions, while in the strokes made with weak dilutions many more colonies will appear on the plain agar than on the gentian violet agar. If the dilution be very weak, in many instances no colonies whatever appear on the gentian violet side. This is due to the fact that only a relatively small proportion of the individuals, in a suspension of a Gram negative organism, are really gentian negative. If the suspension be thick this small proportion of individuals is, absolutely, sufficiently large in quantity to produce good growth in the presence of the dye. If, on the other hand, the suspension be weak, the gentian negative individuals are not only proportionally but absolutely few in number; few colonies therefore appear on the gentian violet agar; if the dilution be very weak none appear.

By cultivating the various colonies which appeared on the plain agar side of such a plate it has been possible to isolate from suspension of a gentian negative organism (*B. coli*) a gentian positive strain. *There may exist, that is to say, within a single bacterial strain, two types of individuals which, though in every other tinctorial and cultural characteristic identical, are quite dissimilar in their reaction to gentian violet, one growing vigorously and the other not at all on media containing this dye. These types retain the differential characteristic after many transplantations.*