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

anemia on the liver of dogs. To produce this anemia, Eck fistulas were made. From five to seven weeks later the abdomen of each dog was reopened, and temporary ligatures placed about the hepatic artery and portal vein. The ligatures were kept in place for from three to twelve hours. The animals were killed from two to six days later.

During the period of ligation, the dogs showed no toxic symptoms. After the release of the ligatures they were in every way apparently normal till the date of the autopsy. The following is a summary of the histological findings:

(*a*) *Three hour anemias:* No thrombosis. No necrosis or atrophy of the hepatic parenchyma. Moderate degree of fatty degeneration, mainly confined to the central third of the lobule.

(*b*) *Twelve hour anemias:* No thrombosis. No necrosis. Marked fatty degeneration of the central half of the lobule, with slight atrophy of the parenchyma immediately surrounding the central vein.

From these findings we conclude that the almost total anemia produced by temporary ligation of the hepatic artery and portal vein in Eck fistula dogs, for periods as long as twelve hours, does not cause necrosis of the hepatic parenchyma.

This power of the hepatic cells to resist local anemia probably accounts in large measure for the infrequency of infarcts in the liver, which infrequency is usually attributed solely to the presence of the double hepatic circulation.

Experiments extending over longer periods of time will be reported later.

14 (1596)

An attempt to produce hemochromatosis experimentally.

By LOREN R. CHANDLER (by invitation).

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The hypothesis is suggested by MacCallum[1] that hemochromatosis may possibly be due to iron retention, secondary to decreased excretion of waste iron by the colon. We have attempted to test this hypothesis by a surgical removal of the colon of dogs.

[1] MacCallum, "Text-Book of Pathology," 1916, p. 112.