bic conditions, facilitates growth and inhibits the D to G transformation.

This observation suggested the possibility that an oxidation reduction process, possibly such a peroxidase-peroxide system as McLeod and Avery have independently described, might be concerned in this type mutation with accompanying loss of virulence. The activity of the blood in inducing optimum growth of Type D microbes and inhibiting the D to G transformation was tested and found to function in a dilution of 1/40,000 of a cc., a quantity just sufficient to give a positive benzidine test. Washed and autoclaved red blood corpuscles in a similar high dilution to the limit of the benzidine reaction behaved in a similar manner. This evidence indicated so strongly that blood was behaving as a peroxidase, that a synthetic compound was tried, $Fe(OH_2)(NC)_5Na_3$, with strong catalytic properties, suggested by Doctor Baudisch and kindly put at our disposal by him. This preparation of iron reacted in dilutions of 0.002 mg. per cc., giving a positive benzidine reaction, furnishing optimum growth conditions for Type D, and inhibiting the appearance of G forms.

Peroxidase is present in the concentrated suspensions of Type D cells; in similar suspensions of Microbe G, the test is approximately four times as strong. So far we have not been able to demonstrate peroxide in the cultures.

Bacterium lepisepticum may be considered, then, as an organism so delicately adjusted in its oxygen requirements that it fails to multiply freely or to maintain certain characteristics associated with its virulence unless available oxygen is mechanically limited, or the oxygen effect is minimized by the presence of peroxidase.

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The extraction of alkaloids from blood.

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When certain alkaloidal salts are added to defibrinated blood of the cat the bases can be extracted by shaking the blood with chloroform. Strychnin has been recovered in this way from a

million parts of blood. The method is applicable to codein, heroin, and quinin, and almost certainly to nearly all the common vegetable alkaloids. Morphin is extracted less readily than most of the alkaloids.

About 20 per cent of an intravenous dose of codein was recovered from blood drawn immediately after the injection. Quinin was recovered from blood drawn at once after the intravenous injection in the cat, but very small amounts were present in the defibrinated blood.

Urine and bile may be extracted in the same way with slight modifications.

The defibrinated blood of the cat yields less than a milligramme (as a rule) of chloroform-soluble matter.

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The relation of adrenalin to the action of insulin upon the blood sugar content.

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During the course of experimental work on the effect of insulin upon the blood sugar content in rabbits, the question arose as to whether insulin and adrenalin were antagonists.

It is well known that insulin acts by diminishing the blood sugar, while adrenalin increases it. It was, therefore, thought highly probable that the administration of both drugs would result in a neutralization of these effects so that the blood sugar would remain practically normal.

A study of the literature gave support to the assumption. Magenti and Biagotti conclude that adrenalin, when given simultaneously with insulin, acts by strongly disturbing the usual insulin effect. These tests were repeated only for the reason that in the first papers on insulin by Banting and Best, and especially in a recent article by McLeod and Orr, special attention was called to the individual differences in rabbits, for sugar test, after the administration of insulin.