The figures in the braces represent determinations on the same patient on different dates.

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Studies in the regeneration of blood.

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In continuation of the unpublished studies of Jencks in this laboratory upon blood regeneration in the rat, it is desired to report the following data: The normal erythrocyte count of rat's blood ranges between 7.5 and 10.5 millions per cubic millimeter; and the hemoglobin content between 110 and 140, as determined by the Smith-Cohen method. Data from rats of varying ages and different sex appear to fall within these limits.

Single hemorrhages, equivalent to 2 per cent. of the body weight, and double hemorrhages, of 2 per cent. on two successive days, were carried out. With the latter procedure it was found possible to reduce the erythrocyte count and hemoglobin content to about one third normal.

On the usual mixed food regeneration of blood was complete in from 7 to 10 days after single hemorrhage, and in 10 to 14 days after double hemorrhage; erythrocyte count and hemoglobin content being taken as indices of regeneration. During starvation regeneration followed single hemorrhage in normal time, but was accompanied by heavy loss in body weight. In starvation following double hemorrhage, the animals usually succumbed before regeneration was complete. Splenectomized rats appear to regenerate in normal time on the normal diet. Rats reared upon the Osborne-Mendel fat-deficient diet showed normal erythrocyte count and hemoglobin content, and after double hemorrhage regenerated in normal time upon the same diet. On a diet deficient in either protein, vitamine, or mineral matter, blood regeneration was appreciably delayed, after double hemorrhage. Hence the data at present available suggest that although blood is parasitic upon the other tissues, any one of the three

dietary factors just mentioned can be made a limiting factor in the rate of regeneration, if the hemorrhage is sufficiently severe. Experiments are now in progress to determine the rôle of iron in blood regeneration.

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Studies on the lytic agent of Bordet and Ciuca.

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We owe to the kindness of Doctor Bordet a strain of *B. coli* with which he carried on his studies, a certain quantity of the corresponding lytic agent and a typical mucoid strain of his modified *coli*. With this material we have observed the following facts.

1. The inhibition produced by the lytic principle on the growth of *B. coli* is greatly influenced by the reaction of the medium: faint in a slightly acid (P_H 6.8) or neutral (P_H 7.0) or even slightly alkaline broth (P_H 7.4), it is much stronger in a more alkaline medium (P_H 8.0 or 8.5).

2. We have isolated from the original strain of *B. coli* two types of organisms: the one, Type S,[1] is sensitive to the lytic agent; the other, Type R,[1] is much more resistant. These types are distinguished also by other characteristics: type S grows quickly in artificial medium and is non-motile; type R grows more slowly, is extremely motile, much less phagocytable and more virulent. Both types ferment carbohydrates, saccharose excepted; type R decolorizes neutral red, type S does not. Both types keep their individuality even after passage through a guinea pig.

3. The original lytic agent was found to be specific; it acted exclusively on the coli with which the guinea pigs had been injected. By allowing this original lytic principle to act on broth cultures of our two types of *B. coli*, we have obtained two new filtrates. The first, resulting from dissolution of the sensitive

[1] S = sensitive; R = resistant.