

the non-fermentable fraction. Pregnant women showed a high content of non-fermentable reducing substance.

Galactose and xylose introduced into the blood stream of rabbits disappeared at a rate proportional to the actual concentration of the sugar in the blood (Fishberg²). The mononuclear reaction formula $C = Ae^{-\alpha t}$ where C is the concentration of sugar in the blood, t is the time in minutes after injection, and α a constant gotten by elimination of A using any 2 separate experimental values of t , is found to apply to the rate of disappearance of foreign sugars injected into the blood stream.

If the kidney of the rabbit is damaged by the injection of uranium there is a distinct delay in the disappearance of the foreign sugar. On the other hand, if phloridzin is administered, the rate of disappearance of the sugar is much accelerated. If the rabbit is poisoned by phosphorus administered over a long period and shows definite fatty degeneration of the liver, there is a distinct retention of galactose in the blood stream.

In human beings galactose disappears more slowly from the blood of patients suffering from nephritis and diabetes. Especially xylose, which is excreted almost entirely through the kidney, shows a much slower rate of disappearance in nephritis, and the time of its disappearance from the blood stream is a good measure of the permeability of the kidney membrane.

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The Sedimentation Rate of the Erythrocytes in Chronic Arthritis.

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Since the original observations of Fahraeus on the variation in the sedimentation rate of erythrocytes in health and disease the phenomenon has been studied in a wide variety of pathological conditions.

We have been interested in the reaction in only one class of cases—patients suffering from chronic multiple arthritis. Employing Westergren's¹ modification of Fahraeus' technique we have made

² Fishberg, E. H., *J. Biol. Chem.*, 1930, lxxvi.

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¹ Westergren Alf, *Acta Medica Scandinavica*, 1920, liv, 247.

approximately 300 observations on 200 patients who sought treatment at the Arthritic Clinic of the Presbyterian Hospital.

Our results suggest that in this limited group of patients the determination of the sedimentation rate of the red blood cells is of distinct value. Our findings may be summarized as follows:

(1) In active cases of rheumatoid (chronic infectious) arthritis the sedimentation rate is greatly increased, usually attaining values above 40 mm. in one hour.

(2) In cases of osteo (hypertrophic) arthritis the sedimentation rate, while, as a rule, slightly elevated, rarely attains values greater than 30 mm. in one hour.

(3) Cases of so-called myositis, fibrositis and neuritis have almost invariably shown a normal sedimentation rate.

(4) In cases of rheumatoid (chronic infectious) arthritis the sedimentation rate parallels to an extraordinary degree the activity of the process.

The test as applied solely to arthritic patients is therefore of considerable value: (1) In differentiating the two great groups of arthritic patients—the rheumatoid or chronic infectious and the osteo or hypertrophic variety. (2) In differentiating between chronic multiple arthritis on the one hand and fibrositis, myositis and neuritis on the other hand. (3) In following the course of the disease and evaluating the results of therapeutic measures instituted.

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Effect of Feeding Specific Polysaccharide on Resistance to Pneumococcus.*

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The author has demonstrated that feeding the pneumococcus to white rats produces an increased resistance to the living organism. The acid killed intact cell,¹ the bile salt dissolved organism² and the mechanically disrupted pneumococcus² have been found effective as immunizing agents when administered by mouth. With the object of determining, if possible, the particular component of the pneu-

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¹ Ross, Victor, *J. Lab. and Clin. Med.*, 1927, xii, 566.

² Ross, Victor, *J. Exp. Med.*, 1930, li, 585.