

animals which died in uremia showed extreme degeneration of both the glomeruli and the tubules. Calcification of the tubules which has been considered pathognomonic of bichloride poisoning occurred in the kidneys of one animal which had been totally anuric for six days prior to death.

¹ Frank, E., *Arch. exp. Path. u. Pharm.*, 1913, lxxii, 387.

3822

Availability of Carbon Compounds for the Streptococcus.

FRANCES KRASNOW AND MARGARET L. ROSENBERG.

From the Laboratory of Biological Chemistry of Columbia University, College of Physicians and Surgeons.

The synthetic media described in our earlier papers^{1, 2} have been used for testing the value of various substances as nutrients. The studies in this paper are concerned with the effect on the growth and viability of streptococci, of the addition of various carbon compounds to the media. These compounds include dextrose, galactose, mannite, lactose, maltose, sucrose, raffinose, glycerol, lactic, tartaric, malic and citric acids.

The experiments show: (1) In most cases dextrose shortens the period of viability markedly. Apparent increases in viability due to the addition of dextrose have been obtained but they were too small to be taken into account. (2) A comparison of dextrose with other sugars in reference to their availability for growth gives series such as sucrose > lactose, maltose > raffinose > mannite, dextrose.

There are several references in the literature to the growth value of dextrose. Samkow³ and Waksman and Joffe⁴ found that although dextrose did no harm, it did not aid materially. Frankel and Pyle⁵ showed that dextrose retarded growth slightly. Koser and Rettger⁶ reported glycerol better for growth than dextrose because less acid is formed and the organism is therefore "freer to develop". None of these investigations refer specifically to the streptococci. The only definite allusion to these organisms with respect to their utilization of dextrose was found in the communication made by Gordon.⁷ He states that dextrose is not utilized by streptococci. Our results corroborate this.

(3) Of the several sugars tested, sucrose seems to be the most easily utilized, though in some cases it was without effect. (4) Similar results were obtained from glycerol, lactic, malic, tartaric and citric acids. These compounds are more often beneficial than the carbohydrates.

¹ Krasnow, F., and Rosenberg, M. L., *Proc. Soc. Exp. Biol. and Med.*, 1925, **xxiii**, 215-17.

² Krasnow, F., and Rosenberg, M. L., *J. Bact.*, 1926, **xii**, 385-408.

³ Samkow, S., *Centralblatt für Bact., Parasit. und. Infect.*, 1904, **xi**, 305.

⁴ Waksman, S. A., and Joffe, J. S., *J. Bact.*, 1922, **lxxvii**, 239.

⁵ Frankel, F. H., and Pyle, E., *J. Infec. Dis.*, 1919, **xxiv**, 17.

⁶ Koser, S. A., and Rettger, L. F., *J. Infec. Dis.*, 1919, **xxiv**, 301.

⁷ Gordon, M. H., *J. Royal Army Med. Corps*, 1917, **xxviii**, 371.

3823

The Mechanism of the Lipemia of Bleeding.

ELLA H. FISHBERG AND ARTHUR M. FISHBERG.

(Introduced by I. N. Kugelmass.)

From the Chemical Laboratory of Beth Israel Hospital, New York City.

It has been known since the work of Boggs and Morris¹ that repeated and copious bleeding of rabbits produces a high grade lipemia. Similar lipemia may occur in humans following severe hemorrhages (Feigl²). Boggs and Morris¹ believe it possible that "the great loss of tissue proteins might have some influence on the abnormal fat metabolism" and that "lowered oxidation following a great loss of red cells plays a part." Sakai³ and Horiuchi⁴ think that the decrease in blood lipase may be the cause of the lipemia. Bloor⁵ believes that nothing definite can be said as to the cause of the fat mobilization.

To further elucidate the mechanism of lipemia of bleeding, having in mind certain analogies with the lipemia observed in human nephrosis, we produced lipemia in 9 rabbits by bleeding, and compared the changes in total fats and cholesterol of blood with the alterations in the blood proteins, certain inorganic constituents and red blood cells. The animals were kept on the usual laboratory diet of cabbage, oats, and bread. The blood was obtained by incision of the rabbit's ear. About 35 cc. daily were removed, omitting a day occasionally when the animal seemed very weak.