

livers of the Eck fistula dogs showed definite changes which will be described later.

Conclusions. The ability of the liver to remove the di-sodium salt of phenoltetrachlorophthalein from the blood stream was not impaired by the establishment of Eck fistulas in dogs. Definite lesions in the liver (to be described later) followed the establishment of the fistulas. A prolonged meat diet did not induce toxic symptoms in these dogs.

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Antiscarlatinal serum of dual potency.

W. H. PARK and A. W. WILLIAMS.

[*From the Bureau of Laboratories, Department of Health,
New York City.*]

The question of the complex nature of hemolytic streptococcus antiserum has been studied since the time of Van deVelde,¹ Marmorek² and others.

Protective power was early demonstrated. Antitoxic powers were also demonstrated broadly for the scarlet fever strains by Moser,³ Savchenko⁴ and others, and were recently made clear cut by the work of Dochez⁵ and of the Dicks.⁶

Realizing that a serum having the power to protect against the living culture, as well as, to neutralize the toxin, might have advantages over a strictly antitoxic serum, we have been inoculating several of our horses by what must be called a modified Moser method. The modifications have been learned by our work on diphtheria antitoxin and antipneumococcus serum, that is, that a protective serum is obtained most easily by the repeated inoculation of the whole killed culture into the vein, and that the antitoxin serum is obtained by the repeated inoculation of toxin subcutaneously.

¹ Vandeveld, *Arch. de Med. Exp.*, 1897, ix, 835.

² Marmorek, Alexandre, *Am. de L' Inst. Past.*, 1895, ix, 593.

³ Moser, *Wien. Klin. Woch.*, 1902, xv, 1053.

⁴ Savchenko, *Russk. Vrach.*, 1905, xxv, 797.

⁵ Dochez, A., *J. Am. Med. Ass'n.*, 1924, lxxxii, 542.

⁶ Dick, G. F., and G. H., *J. Am. Med. Ass'n.*, 1924, lxxxii, 1246.

We inoculated the killed whole washed cultures intravenously and the Buchner filtrates of a six day growth in blood bouillon subcutaneously. Cultures of the filtrates showed 100 colonies of the streptococcus to the cc.

One of the horses we inoculated in this way, No. 86, has been under treatment for nine months. The others for much shorter times.

The inoculations into this horse were started on January 15th, 1925, by giving the whole centrifuged 24 hour broth cultures intravenously. Two days later the Buchner filtrate of a six day blood broth culture was started subcutaneously. The doses were continued on alternate days and were gradually increased. In about 3 months the serum began to show blanching in the Schultz Charlton test. In 5 months the serum was strongly blanching, and 1 cc, neutralized 10,000 Dick skin test doses of the streptococcus toxin. At this time it showed no definite protection.

After nine months 1 cc. neutralized 40,000 skin doses of toxin and 0.05 cc. protected mice against 100 M.L.D. of very virulent living streptococci.

The clinical results with this serum have been excellent but it is impossible yet to state that they have been better than those obtained with antitoxic serum alone. Theoretically such a dual serum should not only neutralize the toxic effects of the streptococcus in scarlet fever but should reduce the number of so-called complications and sequellæ of this disease.

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The Specific Dynamic Action of Carbohydrates.

HARRY J. DEUEL, Jr. and IRENE SANDIFORD.

[From the Laboratory of Clinical Metabolism, Mayo Clinic and Mayo Foundation, Rochester, Minn.]

The speed with which glucose or sucrose may be absorbed and metabolized when it is administered orally would seem to be rapid, judged from observations such as the time necessary for the recovery from insulin hypoglycemia after taking glucose by mouth. No experimental data are on record, however, in which