lesions, early improvement was noted in that the lesions became free of spirochetes. However, all 3 of these cases of syphilis later developed darkfield positive relapses.

The 2 rabbits here reported received approximately 3 to 5 times as much streptomycin on a daily kilogram basis as the above patients. In one rabbit there was apparent cure of the disease after 72 hours of treatment while in the other rabbit 96 hours of treatment failed to cure as demonstrated by testicular transfers. On the other hand, popliteal transfers of both rabbits performed 6 months after streptomycin therapy were negative. Employing the dosage schedule used in these 2 rabbits, the daily dose in a man weighing approximately 60 kg would be 2.5 g which does not represent excessive amounts of streptomycin. The drop in the quantitative Kahn reaction in the 2 rabbits which had received streptomycin is of significance when compared with the control. This same phenomenon was reported as having occurred in one of the patients of the Mayo group. It is important to note that the testicular emulsion of the rabbit which received 96 hours of treatment contained nonmotile spirochetes which took 120 days to cause syphilitic lesions in 2 recipient rabbits, whereas the 24- and 48-hour post treatment testicular transfers, as well as the control, required only 40 days.

In a recent report, Dunham and Rake[4] have likewise shown that streptomycin exerts an antisyphilitic effect in experimental syphilis in the rabbit. While their method of study differed entirely from that employed in these studies, the results are roughly comparable.

Summary. 1. Two syphilitic rabbits were treated with streptomycin for 72 hours and 96 hours respectively, with 42.5 mg per kg and 45.5 mg per kg per day respectively. 2. Darkfield examinations were positive at the end of 24 and 48 hours of treatment and transfers of testicular material from both rabbits caused syphilitic lesions in other rabbits in 40 days. 3. Darkfield examination was negative after 72 hours of treatment in the rabbit which had received 42.5 mg of streptomycin per kg per day. Transfer of one of this rabbit's testicles to 2 rabbits failed to cause syphilitic changes. 4. The rabbit which was treated for 96 hours with 45.5 mg of streptomycin per kg per day showed nonmotile spirochetes which were capable of causing syphilis in 2 rabbits. However, the lesions did not develop until 120 days after inoculation. 5. Popliteal transfers of the streptomycin-treated rabbits, performed 6 months after therapy, failed to cause syphilitic lesions in 141 days. The control's popliteal nodes caused changes in 41 days. 6. The quantitative Kahn reaction for syphilis showed a rapid drop in the rabbits which had received streptomycin. This eventuated in negativity whereas the control remained positive. 7. The results obtained in this preliminary experiment justify further investigation of the effects of streptomycin in experimental syphilis.

[4] Dunham, W. B., and Rake, G., *Science*, 1946, **103**, 365.

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Inositol, a Constituent of Thyroid Gland Effect on Perfused Rabbit's Heart.

ARTHUR E. MEYER.

From The Maltine Therapeutic Foundation, Brooklyn, N. Y.

In connection with an investigation of physiologically active factors contained in thyroid substance, a commercial powder of desiccated thyroid gland (Wilson) of an iodine content of 0.55% was extracted with 95% ethyl alcohol in a Soxhlet apparatus. The extraction was so conducted that the alcohol in contact with the gland powder had a temperature of about 50° and was continued for at least 3 days. The brown alcoholic extract was left standing for 24 hours, after which time a solid substance was found at the bot-

tom of the container. This substance was dissolved in water; the insoluble part was filtered off and the clear solution was treated with norite and evaporated in a water bath to a small volume. Alcohol was added gradually until a precipitate began to be formed. While standing in the cold overnight, slightly yellow crystals were formed. By repeated crystallization from diluted alcohol, using the technic as described, colorless crystals were obtained. They had a corrected melting point of 223° and after drying at 110° gave the following analysis:

40.07 and 39.95% C; 7.04 and 7.10% H; 0.0% N. The substance showed no optical rotation and gave the Scherer reaction.

The theoretical values for inositol are 40% C and 6.67% H. A sample of commercial inositol was recrystallized and then gave a melting point of 223°. A mixture of the crystals from thyroid and inositol had the same melting point. The substance thus was identified as inactive inositol.

The quantity contained in the glandular material was not determined exactly, as the repeated crystallizations lead necessarily to losses. However, it is estimated that about 0.3% of free inositol was extracted from the thyroid powder.

The presence of inositol in aqueous extracts obtained from thyroids in a manufacturing process has been reported before by Tambach.[1] The quantity contained in the thyroid is suggestive of a special significance in the organism. Most of our attempts to find physiological effects of inositol which are not limited to the mere correction of a deficiency, have proved unsuccessful.

Brissemoret and Chevalier[2] have observed a toxic action of inositol on the rabbit's heart perfused by the Langendorff method. They added 0.05 and 0.1% of inositol to the perfusion fluid. In our experiments by the Langendorff method we replaced 10 and 20% of the 0.1% glucose in Locke's solution with inositol to avoid differences in ionic concentration that alone may cause a change in the rhythm of a perfused heart. The effect of both inositol products, the commercial and that isolated from thyroid, was identical in 6 different experiments and consisted in an immediate decrease in the auricular and ventricular amplitude followed by arrhythmias. Final death of the heart could be prevented by change to standard Locke solution as perfusion fluid, which effected prompt, but not quite complete, recovery. The concentrations of inositol of 0.01 and 0.02% are higher than occur physiologically for which reason no conclusion as to the significance of inositol in the function of the heart can be drawn.

Summary. Substantial quantities of optically inactive free inositol were extracted from dried thyroid glands. In the perfused rabbit's heart inositol causes a decrease in the amplitude and arrhythmias.

[1] Tambach, R., *Pharmazeutische Centralhalle*, 1896, **17**, 167.

[2] Brissemoret, A., and Chevalier, J., *C. R. Acad. Sciences*, 1908, **147**, 217.

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Absence of Appreciable *L. casei* Factor Effect in Anti-Pernicious Anemia Liver Extract.

E. L. R. STOKSTAD AND T. H. JUKES.

From the Lederle Laboratories, Pearl River, N. Y.

The absence of considerable quantities of "free" *L. casei* factor from concentrated anti-pernicious-anemia liver extracts[1] is in contrast with the effect of the "liver" form of *L. casei* factor in producing remission of pernicious anemia.[2-4] The possibility remained that "free" *L. casei* factor could be liberated

[1] Clark, G. W., *Am. J. Med. Sci.*, 1945, **209**, 520.

[2] Vilter, C. F., Spies, T. D., and Koch, M. B., *South. Med. J.*, 1945, **38**, 781; Moore, C. V., Bierbaum, O. S., Welch, A. D., and Wright, L. D., *J. Lab. and Clin. Med.*, 1945, **30**, 1056.