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**Susceptibility of the Chinese Striped Hamster (*Cricetus* *Grisens*)
to *Treponema pallidum*.**

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Experiments to determine whether the Chinese hamster is susceptible to inoculation with *Treponema pallidum* have shown that organisms pathogenic for the rabbit may be recovered from certain tissues of this animal species. It would appear that there is dissemination of the organisms from the local focus of inoculation and presumably a multiplication of them occurs.

Hamsters were injected in one testicle with a tissue (orchitis) emulsion rich in spirochetes obtained from rabbits which had been inoculated with either the Nichol's strain or with a strain (P III) isolated from a patient in this hospital in 1926. At varying periods, the hamsters were killed by ether anesthesia and different tissues, emulsified with sterile normal saline were injected intratesticularly in normal rabbits. The rabbits were under observations approximately 3 months. In the case of those in which a clinical orchitis was not detected together with darkfield demonstration of spirochetes, the inoculated testicle and the popliteal lymph nodes were injected in a second set of rabbits; in a few instances, this procedure was repeated in a third set of rabbits.

The available results on the first generation of rabbit transfers may be summarized as follows: (1) In rabbits injected with the inoculated hamster testicle, 37, 64, and 138 days previously, a syphilitic orchitis developed in 2 to 3 weeks. (2) The inguinal lymph nodes of a hamster which was inoculated 64 days previously, induced a syphilitic orchitis in 2 rabbits in 7 and 9 weeks respectively; nodes from a hamster inoculated 138 days previously gave negative results in one rabbit. (3) Brain tissue of a hamster injected 138 days previously, induced a syphilitic orchitis in a rabbit in 43 days; negative results followed the injection of brain tissue of 2 hamsters injected 37 to 64 days previously. (4) Negative results followed the injection of *uninoculated* hamster testicle (64 and 138 days) and of heart's blood (24, 37, 64, and 138 days).

No gross changes were detected in the organs of the hamsters and furthermore, no spirochetes were demonstrated by darkfield in any of the tissue emulsions examined.

The sojourn of the organisms in the hamster for one passage

generation did not appear to affect the pathogenicity of the strains for the rabbit, as judged by the length of the incubation period of the orchitis and by the subsequent development of generalized lesions.

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Further Evidence of Additional Substances Essential to Mammalian Nutrition

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This paper briefly reports some of the experimental evidence encountered in the course of experiments on vitamin G, which can best be interpreted by postulating the existence of more than the 6 vitamins generally recognized as factors in mammalian nutrition. The evidence included is of two types. The first type deals with the supplementary nature of 2 sets of vitamin G-containing products, and the second with the contrasting growth response of animals of different nutritional history, during the latter part of a vitamin G-test period.

In testing by the Bourquin and Sherman method¹ the vitamin G potency of laboratory preparations obtained in fractionation and concentration experiments, a supplementary effect on growth was observed when a mixture of 2 fractions of skim milk powder was fed, as contrasted with the results obtained upon feeding twice the quantity of either fraction by itself. Fig. 1 shows the effect upon gain curves of feeding daily, (a) a definite quantity ($2x$) of an extract made at room temperature from skim milk powder with 80% (by weight) alcohol; (b) a definite quantity ($2y$) of the residue left after extracting the milk powder as described in (a), and (c) a mixture ($x + y$) of half of each quantity of the products just described. During the first few weeks of the test period, the rate of gain permitted by the mixture of the 2 supplementary materials was between that permitted by either given separately, as would be expected if vitamin G were the sole growth-limiting factor. But during the latter part of the test period, the rate of growth permitted by the mixture exceeded that allowed by either of the supplements alone. These results can be explained by postu-

¹ Bourquin, A., and Sherman, H. C., *J. Am. Chem. Soc.*, 1931, **53**, 3501.