curs with the highly purified Diet 519 and generous supplies of the known vitamines contrasted with the normal growth produced in litter mate sisters held on the same diet supplemented only with 10 gm. daily of fresh lettuce leaf substance.

Diet 519—Casein, purified, 25; sucrose, recrystallized, 75; salts 4; yeast or wheat germ daily, 0.7 grams; cod liver oil daily, 3 drops.

[1] Evans, H. M., and Burr, G. O., PROC. SOC. EXP. BIOL. AND MED., 1927, xxiv, 740.

[2] Evans and Burr, The Beneficial Effect of Fat in the Diet and the Evidence for a New Dietary Factor for Growth and Ovulation.

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A Powerful Bacteriophage Against Hemolytic Streptococci of Erysipelas Origin.

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Attempts by several authors to obtain an active lytic principle against streptococci were without definite results. Successful attempts with single strains were reported by Piorkowsky,[1] Dutton,[2] Hadley and Dabney,[3] Clark and Clark.[4] Only two strains were of human origin (Piorkowsky, Dutton). It remains yet to decide as to whether streptococci as a genus are susceptible to the bacteriophage phenomenon, or whether the few strains of streptococci, in which this phenomenon was observed, carried a factor, not common to other streptococci as a genus, which enabled them to be affected by the phage. In this work attempts were made to obtain a lytic principle against human pathogenic streptococci by means of various lytic principles, namely: anti-*B. coli* phage; anti-*staphylococcus* phage; lytic principle isolated by Clark and Clark from activated sludge against a strain of rabbit *streptococcus hemolyticus*. Numerous human strains proved to be entirely resistant towards these phages. One hundred and two strains were tested against Clark and Clark's phage. These human strains also completely lacked the power of regenerating these principles. Since the power of regeneration is essential for obtaining classical bacteriophage phenomenon, various resistant strains were placed under supposedly favorable conditions to enable them to perform this function. All these attempts failed. An effort was then made to "train" the pathogenic strains to regenerate bacteriophage by "adapting" the microorganisms to the lytic principles, instead of the usual method, of adapta-

tion of lytic principle to the microorganisms. Various strains of human pathogenic streptococci chosen for this experiment were subcultured every 24 hours in broth containing 1:10 dilution of lytic principle. After several such passages the cultures were inoculated into flasks of broth, incubated for 24 hours, and 0.5 cc. of each of these filtrates tested against homologous normal cultures of streptococci. Strains of *erysipelas streptococci* "trained" in Clark and Clark's phage acquired the property of regenerating a powerful lytic principle against normal cultures of these streptococci. The lytic principle thus obtained corresponded fully to the classical bacteriophage in every detail. This principle also showed a remarkable specificity. Sixteen strains of *streptococcus erysipelatis*, out of 21 tested, were lysed in dilution $1x10^{-8}$ cc. by this phage. Sixty-four strains from other sources remained entirely unaffected by *streptococcus erysipelas* phage. The method failed to procure a phage against other pathogenic streptococci.

[1] Piorkowski, G., *Med. Klin.*, 1922, xviii, 474.

[2] Dutton, L. O., *J. Inf. Dis.*, 1926, xxxix, 48.

[3] Hadley, P., and Dabney, E., PROC. SOC. EXP. BIOL. AND MED., 1926, xxiv, 13.

[4] Clark, P. I., and Clark, A. S., PROC. SOC. EXP. BIOL. AND MED., 1927, xxiv, 635.

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Gastro-Intestinal Motor Response to Vagus Stimulation after Nicotine.

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While studying the effect of massive doses of nicotine on the enteric nervous mechanism of dogs, Thomas and Kuntz[1] stimulated the vagi after giving large doses of nicotine. The response of the intestine was not abolished by these large doses of nicotine, but, on the contrary, were greater and more constant than before nicotine was administered. This was apparently contrary to the generally accepted conclusion of Bayliss and Starling.[2]

The present report is based on 28 experiments on cats, 19 females and 9 males, weighing from 2.0 to 4.1 kilograms. They were narcotized with ether, and the brain and spinal cord destroyed by pithing. Artificial respiration was administered through a tracheotomy