We are at present examining the Arthus phenomenon in a similar manner, and also the reaction of normal and allergic cells to the intact tubercle bacillus.

Conclusion. Cellular injury and necrosis associated with allergy in tuberculosis result from a change in the individual fixed tissue and blood cells, which renders them more sensitive to the products of the tubercle bacillus. There are no humoral factors necessary for the production of the injurious local effects of allergy in tuberculosis.

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Rate of Reflex Conduction in a Cataleptic Patient.

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A previous study of normal subjects has well established the fact that in the case of the knee-jerk the average length of time elapsing between the instant of stimulation of the patellar tendon and the appearance of action currents in the executant muscle is .0197 seconds.[1] This average is based upon records obtained from 87 individuals who presented reflex times ranging from .0114 to .0268 seconds. Reflex conduction rate is relatively constant for the same individual under normal conditions. However it was thought that certain mental and physical abnormalities might affect it and with this thought in mind a study was made of a case diagnosed as toxic-infective-exhaustive psychosis. When the first records were obtained the patient displayed catalepsy, *cerea flexibilitas,* muteness, stupor, and absolute disorientation. The findings revealed her reflex time to be .0059 seconds. Four days after these records were obtained she showed marked improvement—the catalepsy and *cerea flexibilitas* had practically disappeared, and she was talking and enjoying herself with other patients. Records now revealed the fact that her reflex time was .0180 seconds. Twenty-five days later when she was discharged as "physically improved and mentally recovered" her reflex time was .0185 seconds. Thus it appears that the catatonia here was accompanied by a markedly reduced patellar tendon reflex time, and that as the catatonic condition cleared up the reflex time approached the average for normal indi-

[1] Travis, Lee Edward, *Science,* Jan. 13, 1928.

viduals. An explanation of this increase in reflex conduction rate during catalepsy is difficult to make. It may be due to increased facilitation of transmission of the nerve impulse, to blocking out of parts of the arc ordinarily traversed by the nerve impulse, or to more obscure and involved alterations of neural, neuromuscular, or muscular factors.

Another study has indicated that the Betz cells in the precentral cortex may constitute part of the arc which subserves the knee-jerk.[2] Studies which we are now carrying on relative to the effects of emotion, stuttering, physical disease, and alcohol upon reflex time show still better that the cortical arcs are involved in the patellar tendon reflex. Thus it would seem that in catalepsy the reduced reflex time is due to blocking out of parts of the arc which ordinarily function in the knee-jerk response.

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The Colonic-Jejunal Reflex in the Dog.*

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(Introduced by A. J. Carlson.)

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In a study of the influence of treadmill running on jejunal Thiry fistula motility in the dog, variable results were secured. Thus at times there was complete inhibition of motility and reduced tone during the running, whereas at other times the motility was little modified. Chance observations, on several occasions, associated balking, attempts to sit down, and defecations while running with reduced jejunal tone and motility. The plausibility of the notion that all of these "misbehaviors" might be expressions of the defecatory reflex and thus have an ultimate seat in colonic activity and that this might help to untangle the mechanism by which exercise operates on the jejunum, led us to investigate more specifically into the influence of colonic stimulation on the jejunal motility and tone. Two approaches appeared obvious: 1. To observe the jejunal mo-

[2] Travis, L. E., Tuttle, W. W., and Hunter, T. A., *Am. J. Physiol.*, 1927, lxxxi, 670.

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