by the absence of vitamin D and for this reason it was believed that the unbalanced mineral content of the diet played a very small part in the hypomotility observed in the rats fed a diet deficient in vitamin D with unbalanced minerals. The present experiments were undertaken to substantiate or to disprove this hypothesis.

Three different groups of rats were used. One group was fed a diet deficient in vitamin D with unbalanced minerals for a period of 5 weeks. Another group was fed a diet deficient in vitamin D with an adequate mineral content for the same length of time. The third group was fed a normal diet for the same period. All the rats were made to fast and abstain from water for 24 hours when they were fed a 10 gm. mixture of 3 parts of buttermilk and one part of barium sulphate. Fluoroscopic examinations were made of all groups every 15 minutes.

A hypomotility of the gastro-intestinal tract was observed in the 2 groups of rats fed a deficient vitamin D diet. This observation was noted by us in rachitic rats. Our 2 groups of rats in this experiment would seem to indicate that the mineral content of the diet administered apparently played no part in the alteration of the gastro-intestinal tract.

TABLE I. (Averages)

Diets.	Cecum App. Time		Stom. Emp. Time		Sm. Int. Emp. Time		Colon Emp. Time
—D.	hr.	min.	hr.	min.	hr.	min.	hr.
High Ca, low P	1	55	8	27	9	56	93
—D.							
Normal minerals	1	56	7	56	9	16	96
Normal	2	15	6	18	7	46	60

Conclusion. It would appear from our observations that the cause of the hypomotility of the gastro-intestinal tract of rachitic rats is due to a lack of vitamin D and not to the unbalanced minerals of the diet.

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Some High Tremor Frequencies.

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Hill[1] demonstrated that in addition to the usual tremor frequency

[1] Hill, A. V., *J. Physiol., Proc. Physiol. Soc.*, 1927, **55**, xiv.

of 8 to 12 tremors per second, a tremor frequency of around 50 tremors per second could be recorded. He found that the tremors of higher frequency and lesser excursion were superimposed upon those of lower frequency and greater excursion. Travis and Hunter[2] called attention to the striking similarity between records of tremors and those of action currents and later recorded tremors of a rate as high as 200 per second.[3] The present paper reports the recording of tremors of a rate as high as 500 per second.

For the recording of the tremors we used an electrical current generator to activate, with or without the aid of amplification, a super-sensitive element of a Westinghouse oscillograph. All tremors were recorded from the extended forefinger of the firmly supported hand. Several healthy individuals served as subjects. By means of an electrical filter and amplifying system we were able to by-pass and amplify greatly only tremors of frequencies above 130 per second. When such recordings are compared with those obtained without the use of filter and amplifier some interesting relationships are revealed (Fig. 1). It is to be noted that each large tremor (in

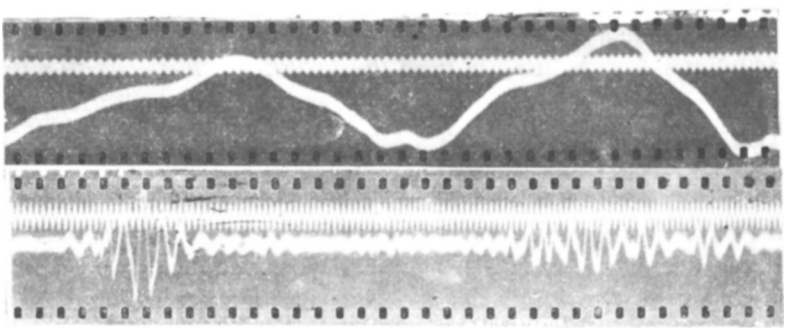

FIG. 1.
Records of tremors from the extended forefinger with the hand firmly supported. The upper record was obtained without the use of filter and amplifier. The lower record was obtained by by-passing and amplifying only tremors above 130 per second. Time is recorded in 0.002 sec.

upper record) enduring approximately 0.1 sec. is really composed of a group of several oscillations (in lower record) occurring at a rate of about 200 per second. Further the tremor line between the volleys is not quiet. It presents both smaller oscillations of the same frequency as the larger waves in the volleys, and other generally still smaller oscillations of a frequency as high as 500 per second.

[2] Travis, L. E., and Hunter, T. A., *Am. J. Physiol.*, 1927, **81**, 355.
[3] Travis, L. E., and Hunter, T. A., *J. Gen. Psychol.*, 1931, **5**, 255.

To be sure that all of the oscillations recorded come from the extended finger several control tests were made. With either a constant pressure or with no pressure on the platform of our generator no oscillations were detected. With either the input wires of the amplifier short circuited or with them open no disturbances of any kind appeared in the records. Great care had to be taken to eliminate the effects of tones and noises. However, we feel certain that mechanical, acoustical and electrical artifacts do not appear in our recordings.

There remains the problem of allocating the possible source of these tremor frequencies.

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Cultivation of the Virus of Common Cold and Its Inoculation in Human Subjects.

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In a series of papers Dochez[1] and his associates have presented evidence for the virus etiology of the common cold and have described experiments on the cultivation of this virus in tissue media and its inoculation into human subjects and chimpanzees. The purpose of this investigation has been to cultivate the virus of common cold and during the period of the year when the incidence of common colds is low to conduct human inoculation experiments on volunteers not subject to isolation.

The strain of common cold virus employed in these experiments was derived from a patient, "A. R.," suffering from a cold of more than usual severity. Nasal washings were obtained on March 26th, 1931, within the first 24 hours of the onset of the cold. Ten cc. of Tyrode solution were flushed through each nostril and expelled through the mouth. These washings were promptly passed through a Seitz filter and cysteine hydrochloride added to a concentration of 1:2000. The filtered washings were introduced in 1 cc. amounts

[1] Dochez, A. R., Shibley, G. S., and Mills, K. C., PROC. SOC. EXP. BIOL. AND MED., 1929, **26**, 562; **27**, 59; *J. Exp. Med.*, 1930, **52**, 701. Shibley, G. S., Mills, K. C., and Dochez, A. R., *J. Am. Med. Assn.*, 1930, **95**, 1553. Dochez, A. R., Mills, K. C., and Kneeland, Y., PROC. SOC. EXP. BIOL. AND MED., 1931, **28**, 513; **29**, 64.