

TABLE II.

THE EFFECT OF MODERATE EXERCISE, LONG CONTINUED, ON THE CONCENTRATION OF LACTIC ACID IN THE BLOOD OF DOGS.

Dog.	Date.	Distance in Miles.	Rate in Miles/hr.	Lactic Acid in Mgm./100 c.c.	
				Before Exercise.	After Exercise.
A.	February 7, 1921.	11.0	4.9	4.9	2.9
	February 15, 1921.	27.0	4.5	7.8	6.2
B.	February 9, 1921.	10.8	5.0	12.4	6.3
	May 3, 1921.	5.2	5.2	24.2	16.7
C.	January 30, 1921.	13.7	5.5	13.4	9.6
	February 24, 1921.	22.8	4.6	13.2	7.8

159 (1741)

**A case of metastatic calcification associated with chronic nephritis
and hyperplasia of the parathyroids.**

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The case was one of severe chronic nephritis in a man of twenty years. About the larger joints of the upper extremities and about the feet were many fluctuant tumor masses of various size, and distributed along the course of many of the peripheral arteries were innumerable bead-like nodules which could be felt, while x-ray plates showed extensive calcification of the peripheral arteries and large irregular deposits about the joints.

The aspirated contents of one of the tumors was found to be a thick, creamy fluid simulating pus in the gross, containing amorphous material without cells and a suspension of calcium phosphate of 30 per cent. Otherwise the analysis of the fluid resembled normal synovia.

A peripheral artery bearing the nodules was excised from the leg and was found to be stiff, very tortuous, and to have numerous small yellow and white deposits of calcium in the wall. Microscopically the media was largely replaced by calcium salts, the intima was much thickened, and in places there was little lumen.

Only limited metabolic studies were possible because of the patient's serious condition. Urinary and fecal calcium determinations were done but are of no value as enemata were necessary for constipation. On an ordinary low protein diet, with little milk, the blood calcium was high, being 13.4 mgs. per 100 c.c. of blood, fell to 11.9 mgs. after three days of a low calcium diet, and rose to 12.7 mgs. on a high calcium diet for three days.

The other blood analyses showed the usual findings of a severe progressive, chronic nephritis with a marked lowering of the alkaline reserve.

The patient died 11 months after the first tumor masses appeared, and autopsy revealed a severe interstitial nephritis with a right hydronephrosis, calcium deposits in the wall of the left auricle, extensive and marked calcification of the smaller peripheral arteries, the arteries of the gastro-epiploic omentum, and the jejunum, but sparing the liver, spleen, lungs, kidneys and stomach, an osteitis fibrosa particularly marked in the skull, ribs and vertebræ, and two large parathyroid bodies, 2 c.m. in diameter, with some hyperplasia microscopically and a small adenoma in one.

Hyperplasia of the parathyroids has been described in a few cases of chronic nephritis but there appears to be no description of such extensive calcium changes as this case presents, except in metastatic calcification, and this man did not show the deposits in the lungs, kidneys and stomach, usually found in the latter condition.

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Studies on atmospheric requirements of bacteria.

1. Water vapor tension.

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Quantitative experiments on the relation between the growth of bacteria and the amount of water present have been limited to studies on the effect of water content of media, and are sur-