The following results were obtained in rats 180 days of age:

	Percentage Hypertrophy
1. Non-pregnant	23.9 per cent
2. Pregnant after nephrectomy	31.7 per cent
3. Pregnant before nephrectomy	32.9 per cent
4. Pregnant and lactating after nephrectomy	34.3 per cent

Two experiments were carried out on rats 360 days of age.

1. Non-pregnant	24.7 per cent
2. Pregnant after nephrectomy	28.5 per cent

Further experiments are now under way which may throw light on the significance of these figures.

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The effect of training on lactic acid excretion.

By J. K. LEWIS, A. W. HEWLETT and G. D. BARNETT.

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To determine the effect of training on the lactic acid excreted in the urine after exercise, an untrained subject began regular exercise twice a week for two weeks, and then daily for three weeks. The exercise consisted in carrying a 30 pound load on a treadmill with 7 inch steps for 5 minutes at a rate of between 80 and 85 steps per minute. Samples of urine were collected immediately before, and for approximately half an hour after exercise. The rate of lactic acid excretion before exercise was determined, and the subsequent excess above this resting rate was attributed to the exercise. The results of these determinations at various periods during the experiment are given in the accompanying table. It shows a definite decrease in the excess of lactic acid as the experiment proceeded. Subjectively this decrease was accompanied by somewhat less distress during exercise and by less fatigue afterward. This decrease might be explained by assuming an increased mechanical efficiency, so that less lactic acid was formed by muscular contraction; or the decrease might be due to a better oxidative removal of lactic acid because of

changes occurring in the muscle itself, or an increased oxygen supply to the muscles from an improved circulation.

Date	Excess of lactic acid.
3-18-25	458
3-20-25	329
4- 2-25	309
4-10-25	199
4-23-25	159
4-24-25	158

257 (2780)

The effect of breathing oxygen-enriched air upon the excretion of lactic acid.

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Lactic acid was determined in the urine of two subjects before and after a measured exercise. Two groups of four experiments each were made with each subject. In one group the subject breathed air, and in the other oxygen-enriched air containing about 40 per cent of oxygen. In order to eliminate the possible effects of training, the air and oxygen experiments were alternated. The exercise consisted in carrying a 30 pound load for five minutes on a treadmill with 7-inch steps, operated at the rate of 80 to 85 steps per minute, the work performed being about 6000 kgm. in five minutes. The resting rate of excretion of lactic acid bodies in the urine was determined before each exercise period, and the excess excretion above this level during approximately a half-hour period after the exercise. Determinations were made in duplicate by the method of Clausen, using permanganate oxidation as recommended by Long.

Both subjects showed a lower excess excretion of lactic acid when breathing oxygen-enriched air than when breathing air. Average figures for the four experiments in each group are as follows: