The surely toxic or even fatal dose of cocaine could thus be given repeatedly without causing any significant effects on the heart. In one experiment doses of 5 mg. per kilo were injected until 85 mg. per kilo were administered. The effect of the drug became pronounced only after the fourth injection. Furthermore, when the last dose was given, the auricles, though depressed, were still contracting, while the ventricular beats were quite vigorous. The resistance to cocaine was still greater in another cat. The total amount of the drug tolerated was 105 mg. per kilo, which was administered in divided doses in one hour and 41 minutes. Heart action was fairly good even after the last dose, while distinct evidence of toxicity was first obtained only after eight doses were given, or a total of 40 mg. per kilo.

[1] Salant, William, and Nadler, J. Ernest, *Am. J. Physiol.*, 1926, lxxviii 308.

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Feeding Experiments With Plants at Different Stages of Development. III: Synthesis of Vitamin in Plants.

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In a previous publication[1] we have pointed out that in order to determine whether there is a synthesis of vitamin during the germination and greening of corn, it is not enough to compare *equal weights of the dried material* (ungerminated, germinated and green), as other workers have done before us, but to compare *an equal number of seeds.* This we have now done, in a continuation of our experiments. Fifteen rats were kept on a synthetic diet, deficient in vitamin A, until they became stationary in weight. To the diet of the first five (group A) was now added the equivalent of six seeds of ungerminated corn per rat per day; to the diet of the second group of five (group B) was added the equivalent of six seeds of germinated corn per rat per day; to the diet of the third five (group C) was added the equivalent of six seeds of green seedlings per rat per day. Within 81 days after the corn feeding had begun, all the rats in groups A and B had contracted xerophthalmia, and 8 had died while all the rats in group C were in excellent condition and were continuing to gain in weight.

The average weight of each seed was for the ungerminated, 0.17 g., for the germinated, 0.16 g., and for the green 0.11 g. Despite the fact that the weight of green material offered group C was less than the weights of germinated and ungerminated material offered groups A and B, respectively, group C thrived, whereas rats of groups A and B developed xerophthalmia and declined..

Since vitamin A is associated with xerophthalmia, these results show conclusively that there was a synthesis of vitamin A during the course of greening.

This is a preliminary report.

[1] Harrow, B., and Krasnow, F., *J. Med. Res.*, 1923, iv, 491; PROC. SOC. EXP. BIOL. AND MED., 1924, xxi, 232.

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Changes in CO_2 Combining Capacity of Blood Following Exercise in Individuals with Organic Heart Disease.

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Changes in the carbon dioxide combining capacity of the blood in normal individuals following vigorous exercise have been reported by a number of investigators. These changes consisted chiefly of a decrease in this constituent. Barr, Himwich, and Green[1] found that easy muscular exercise may be performed with little or no change, but that with heavier work the degree of change in carbon dioxide combining capacity increases rapidly with each small increase in the amount of work.

The purpose of this investigation was to determine whether or not similar changes in the carbon dioxide combining capacity occur in individuals with organic heart disease after performing a definite amount of work. The majority of the cases studied were children between the ages of 8 and 16 years, with organic heart disease caused by the infection of rheumatic fever. We also made observations on two normal individuals, and one case of congenital heart disease. The exercise consisted of climbing thirty feet of stairs in forty seconds. In a number of milder cases, the effect of climbing sixty feet was studied. The patients were ambulatory, but varied in their ability to carry on physical activity. The cases were classi-