

the testes with epididymes in the control rats was 4.61 grams as contrasted with 1.64 grams average weight in the experimental rats. The average weight of the prostate gland in the controls was 0.535 gram; 0.162 gram in the experimental animals. The average weights of the seminal vesicles in the control and experimental groups was 0.467 and 0.063 gram respectively.

Histologic study of sections of the sex glands showed an atrophy of the glandular elements of the prostate gland and seminal vesicles and of the germinal layers of the seminiferous tubules of the testis, particularly a disintegration of the primary and secondary spermatocytes and of the spermatids, in the rats fed beef testis. No change of moment was noticed in the interstitial cells of Leydig. The stroma of the different sex glands did not show any definite change, though the stromal portion of the tissues appeared relatively prominent on account of the atrophy of the glandular elements.

The Anesthetic Action of Vinyl Chloride. ANDERSON S. PEOPLES and C. D. LEAKE, University of California.

Vinyl chloride ($\text{CH} = \text{CHCl}$), first prepared in 1833, is a gas at ordinary temperature (B.P. -13.9°C .), heavier than air and with an ethereal odor. In concentrations of 4 to 20 per cent in air it may be burned, but with difficulty. It is doubtful if it polymerizes to any great extent in the absence of light. In studying its toxicity, Patty et al. (Pub. Health Rep., 1930, xlv, 1963) noted its narcotic action. We found its minimal anesthetic range on mice exposed for ten minutes to be 3.5 to 5 millimols in air, while its minimal lethal range at ten minutes exposure is 10 to 12 millimols in air. It thus has a wider margin of safety than ethyl chloride, although it is not quite so powerfully anesthetic. At a concentration of 7 millimols in air it anesthetizes larger animals such as rabbits and dogs within a minute. Recovery is very rapid, and with no apparent untoward effects even after prolonged anesthetization.

Recovery of Morphine from the Tissues of Tolerant and Non-Tolerant Dogs. O. H. PLANT and I. H. PIERCE, State University of Iowa.

A method is described for the extraction and estimation of small amounts of morphine, which gave constant results (95 to 110 per cent recovery) when the alkaloid is added to normal tissues.

The experiments were planned so that the results could be directly compared between tolerant and non-tolerant dogs under identical conditions. Results are given for the recovery of morphine from liver, muscle, central nervous system, heart, lungs and blood and from the excretory organs and excretions. Twenty-four dogs were used, half of which had received hypodermically a single dose to 50 mgm. morphine sulphate per kilogram and half had received daily a dose of the same size for periods of approximately one year to more than four years. Environmental and nutritional conditions of all the dogs were carefully controlled. All were kept in metabolism cages and both food and water were given by stomach tube for intervals before the tissues were examined. Tissues from an equal number of both tolerant and non-tolerant

dogs were analyzed for morphine. The tissues and body weight were determined.

The average total recovery of morphine after the dose was given was 95 per cent while in the same tissues total recovery was greater in the tolerant dogs.

Of the individual tissues, the highest concentration in muscle, central nervous system, tolerant ones. The body weight was non-tolerant. The average concentration in the other tissues.

The amount of morphine in the same in tolerant dogs was greater in the tolerant animals than in the twenty-four hour group than in the percentage of the dose the dose.

The results suggest that morphine is handled in tolerant dogs recovered from tolerance twenty-four hours after "destroy" morphine is the dose.

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A Comparison of the Barbitol in Rabbits.

T. W. PRATT, University of Iowa.

In rabbits there is excretion of the liver, from the blood, and the butal). In animals as to significantly delay blood, there is found a. On the contrary, the appear to be influenced by pentobarbital is the action of barbit poisoning, is obviously excreted by the kidney.

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