

phragm and the upper pole of the adrenal gland. Three satisfactory preparations were obtained, 2 unilateral and one bilateral, in which the electrode did not pull out or cut through as determined by post-mortem examination in each case. Stimulation consisted of a 60 cycle alternating current of low voltage, from 0.1 to 0.5 volt, the voltage being raised to the point where the animal was annoyed by the stimulus, but below the level of pain as judged by reactions. The stimulus was alternately applied for 3 minutes and interrupted for 30 seconds in an attempt to avoid nerve fatigue. Except for a few minutes each day required to determine the blood pressure by the needle puncture method, the stimulus was maintained continuously for 17, 11, and 4 days in the 3 dogs. Except for one dog which showed a rise from a preoperative mean blood pressure of 115 mm Hg to an average of 155 mm Hg for the first 4 days, followed by a return to normal, no continued rise in pressure was demonstrated.

10375 P

Development of Cardio-pericardial Adhesions Following the Use of Talc.

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Hydrous magnesium silicate (talc) powder was used inside the pericardial sac to produce adhesions of the pericardium to the epicardium. The reaction consisted in the development of a bread and butter pericarditis without the formation of fluid.

Adhesions occurred between the 2 surfaces as early as 18 hours. After one week the 2 surfaces were firmly adherent, and after 4 weeks the pericardium and the epicardium were fused as one layer of tissue.

There was no widespread development of adhesions beyond the area of the powder, the adhesions forming only at the site of the powder. The talc remained within the pericardial sac *in situ* and at autopsy was not discovered in the regional lymph glands.

The presence of new blood vessels between the pericardium and the epicardium was demonstrated at subsequent operations when bleeding was observed from both tissues when the 2 layers were separated. Also microscopic sections demonstrated the presence of new blood vessels.

In this series of experiments 46 operations were performed on 40 dogs. Under intraperitoneal nembutal anesthesia and intratracheal oxygen insufflation the chest was opened in the 5th interspace. The lung was manually compressed and held out of the way. The pericardium was opened and approximately one dram of the powder was lightly dropped and sprinkled onto the surface of the epicardium. The pericardium was then closed with a continuous suture. The lung was reexpanded and the chest closed by percostal sutures and approximation of the soft tissues of the chest wall.

10376 P

p-Bromophenol as the Intermediate in Synthesis of p-Bromophenylmercapturic Acid from Bromobenzene in the Rat.

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White and Lewis¹ in agreement with Coombs and Hele² demonstrated that the suggestion that in dogs "the oxidation to the phenol is a preliminary step in the synthesis of p-bromophenylmercapturic acid after the administration of bromobenzene appears improbable."³ These workers reported that p-bromophenol, when fed to dogs, was in part excreted as an ethereal sulphate. No appreciable effect on the excretion of the neutral sulfur in the urine was noted. This observation indicated that apparently no p-bromophenylmercapturic acid was formed from p-bromophenol.

It appeared desirable to investigate the question of the synthesis of p-bromophenylmercapturic acid from p-bromophenol in the rat, using the direct method for the estimation of mercapturic acids in the urine. Aside from the fact that such an investigation had not previously been made on the rat, we felt that apparently the question of the formation of p-bromophenol from bromobenzene as a preliminary step in the synthesis of p-bromophenylmercapturic was not as yet settled. Thus Bodansky³ in discussing the mechanism of the synthesis of the mercapturic acid from bromobenzene, states that "the reaction involves first oxidation to p-bromophenol and its subsequent conjugation with cysteine. The resulting p-bromophenyl-

¹ White, A., and Lewis, H. B., *J. Biol. Chem.*, 1932, **98**, 607.

² Coombs, H. I., and Hele, T. S., *Biochem. J.*, 1927, **21**, 611.

³ Bodansky, M., *Introduction to Physiological Chemistry*, 4th edition, p. 393, 1938, John Wiley, New York.