

threne, however, is practically insoluble in water and experiments with it had to be made using alcoholic solutions of the drug. An attempt was therefore made to obtain a simple compound of phenanthrene which is soluble and could be more conveniently employed for tests *in vitro*. Through the kindness of the chemist, Dr. Charles Rouiller, a simple phenanthrene sulphonic acid was prepared and a sodium salt of the same, being neutral in reaction and freely soluble in water, was employed in making the pharmacological tests. It was found that sodium phenanthrene-sulphonate had very little or no effect on the contractions and tonicity of isolated smooth muscle organs. On the other hand, experiments with piperidine hydrochloride revealed at once that piperidine is a powerful stimulant of smooth muscle, causing an increase in the rate and strength of its contractions and an increase in its tonicity. Straub's phenomenon may, therefore, be ascribed to the peripheral effect of the piperidine portion of the morphine molecule: and, indeed, the author has found that when a suitable dose of piperidine hydrochloride is injected into a mouse or a rat, a condition resembling Straub's phenomenon is often produced soon after the injection.

The interesting effect of piperidine upon smooth muscle, mentioned above, has, as far as the author has been able to ascertain, never been described before. A complete study on the action of piperidine on plain muscle is at present the subject of further investigation, and will be published in due time.

61 (1521)

The action of prostatic extracts on isolated genito-urinary organs.

By **DAVID I. MACHT** and **S. MATSUMOTO**.

[From the Pharmacological Laboratory, Johns Hopkins University, and the James Buchanan Brady Urological Institute, Baltimore.]

The contractions and tonicity of various surviving excised genito-urinary organs were studied *in vitro*: firstly, under normal conditions, and secondly, after the addition of prostatic extracts

to the medium in which the tissues were suspended. The following organs were examined: Uterus and Fallopian tube, bladder and ureters, and vas deferens and seminal vesicle. Aqueous saline extracts of the ram's, dog's, bull's, steer's and human prostate glands were used. It was found that all of the above organs are stimulated *in vitro* by prostatic extracts, provided a sufficient dose is used; but that different organs require different doses of the glandular extract. The uterus and tubes were found to respond to the smallest quantities of prostatic extract; the bladder and ureters came next in the order of their response to such treatment; while the vas deferens and seminal vesicles required the largest doses of the extracts to give evidence of any physiological effect. As a result of the experiments, the authors conclude that the prostatic extracts cannot be regarded as having any specific or marked influence on the tonus and contractions of the bladder *in vitro*. Fuller data will appear in due time in the *Journal of Urology*.

62 (1522)

Phenol elimination in the dog after intravenous injection of neoarsphenamine.

By CHARLES WEISS

[From the Dermatological Research Laboratories, Philadelphia, Pa.]

Although Ehrlich himself recognized the importance of discovering the fate of salvarsan in the animal body, it was Sieburg¹ who first approached the solution of this problem. This investigator succeeded in isolating from the urine of a syphilitic patient who had received repeated intravenous injections of salvarsan the following substances: *p*-aminophenol, *o*-acetylaminophenyl hydrogen sulphate, oxycarbanil, an aminohydroxyphenylarsonic acid, $C_6H_8O_4N$ As, and a hydroxyphenylarsonic acid, $C_6H_7O_4As$, besides inorganic arsenates and arsenites. He concludes that salvarsan is broken down in the system in the following way (Chart 1):

¹ Sieburg, E., *Zeitschr. physiol. chem.*, 1916, 97, 53-108. Abstr. in *Chem. Abstracts*, 1917, 2, 270-1. (Original article not available in U. S. A.)