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Pharmacodynamic reactions of erectile tissue and the dorsalis penis artery.

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The physiology and even the anatomy of erectile tissue has never been satisfactorily investigated and our knowledge on the subject is still very meager. In connection with a pharmacological investigation of *aphrodisiac* drugs the author thought it desirable to inquire into the pharmacological behavior of erectile tissue as well as of the dorsalis penis artery. After long experimentation a method of studying these tissues has been developed and the effects of various drugs on the same were investigated. In the present research isolated surviving pieces of copora cavernosa and spongiosa of the dog were kept alive in warm oxygenated Locke solution under special conditions and the response of the preparations to various drugs was studied. In the case of the dorsalis penis artery, rings of the dog's artery were employed.

The modern anatomist in tracing the finer structure of the nervous system resorts to pharmacodynamic reactions for the determination of the origin of different parts of the sympathetic nervous system. Thus, for instance, a pharmacological response to adrenalin is an indication that the particular muscle preparation studied is innervated by the true or thoracico-lumbar sympathetic system; while a response to such drugs as pilocarpin and atropin indicates an innervation coming from the parasympathetic or bulbo-sacral sympathetic system.

In the present investigation it was found that both erectile tissue preparations and preparations of the dorsalis penis artery responded with contraction or relaxation as the case might be on treatment with epinephrin and ergotoxin. On the other hand numerous experiments made with pilocarpin, physostigmin, atropin and other so-called "parasympathetic" poisons failed to elecit any response in either the erectile tissue or dorsalis penis artery preparations. In view of these results, repeatedly and consistently obtained, it appears that both corpora cavernosa

and spongiosa as well as the dorsalis penis artery of the dog are supplied by nerve filaments belonging to the true sympathetic system and not to the parasympathetic system. Full details to appear in the *Journal of Urology*.

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The influence of the cation in the precipitation of the proteins of blood by sodium phosphate.

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The precipitation of the globulins of blood with sodium sulfate at 37°C.[1] indicates the presence of critical zones in the curve of precipitation with increasing concentrations of sodium sulfate. Comparison of the results obtained with sodium sulfate at these zones with other procedures for the precipitation of the proteins of blood, by other salts or acidification, showed similar quantitative results. The critical zones occurred at 10.6[2], 14.2, 17.7 and 21.3 per cent. of anhydrous sodium sulfate, *i. e.*, the designated quantity of salt dissolved in 100 c.c. of water at 37°C. These values are approximately 0.75, 1.00, 1.25 and 1.50 molar solutions of sodium sulfate. Furthermore, under similar conditions any given concentration of salt will precipitate the same amount of protein. These observations have been extended to other salts and it has so far been found that a similar relationship holds for each salt; after precipitation begins there is a constant difference in the concentration of salt for the succeeding fractions. Precipitation of fibrinogen ends at approximately the concentration of salt found by Lewith[3] for the beginning of the precipitation of euglobulin,—observations which were correlated on the basis of equivalent concentrations by Hofmeister[4]. The difference in concentration between the various fractions is not necessarily the same for all salts, *e.g.*, for magnesium sulfate it is 0.375 mol.

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[1] Howe, Paul E., *Jour. Biol. Chem.*, 1921, xliv, 93.

[2] Howe, Paul E., *Jour. Biol. Chem.*, 1922, liii, 479.

[3] Lewith, S., *Archiv. f. Exper. Path. u. Pharm.*, 1887, xxiv, 1.

[4] Hofmeister, F., *Archiv. f. Exper. Path. u. Pharm.*, 1887, xxiv, 257.