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.

Sodium phosphate at P_H 7.0 completes the precipitation of fibrinogen at an approximately molar PO_4 solution and the difference for subsequent fractions is 0.25 mol. By varying the proportions of mono-sodium and di-sodium phosphate to obtain solutions of similar molecular concentration with regard to the PO_4 radicle, but with varying hydrion concentrations, it was found that higher molecular concentrations were required for the precipitation of the various protein fractions. By adjusting the concentrations of the phosphate solution at each P_H to concentrations of sodium which were equal to the sodium content of solutions which were 1.0, 1.25, 1.50 and 1.75 molar with regard to the phosphate radicle at P_H 7.0, it was found that between approximately P_H 8.0 and 5.8 essentially the same amount of protein was precipitated as at P_H 7.0. If the precipitations be made with concentrations of sodium phosphate at P_H 7.0 which are such that they are equal in sodium concentration to the sodium sulfate solutions, essentially similar results are obtained with the two salts for each protein fraction. In fact, the sodium concentrations of the fractional molar concentrations with relation to the phosphate radicle given above differ only slightly from those of concentrations found for sodium sulfate.

When the proteins of serum were precipitated with the different sodium phosphate solutions no precipitation occurred until the equivalent of 1.25 molar phosphate at P_H 7.0 was added, *i.e.*, no fibrinogen was present. If the serum of the new-born calf was used, precipitation did not occur until the equivalent of 1.75 molar phosphate at P_H 7.0 had been added, or only a slight precipitation occurred at 1.50 molar. On the other hand, if the *plasma* of the new-born calf was used, precipitations occurred at the equivalent of 1.0 molar phosphate and no increase was observed until a concentration above 1.50 molar was reached, *i.e.*, fibrinogen, euglobulin and pseudoglobulin I were absent from serum and fibrinogen was present in the plasma.

In all of these cases we were dealing with a constant concentration of sodium but with varying concentrations of the phosphate radicle—a range of approximately 0.8 mol. for any range of the hydrion concentrations. It appears, therefore, that the precipitation of the proteins of blood at hydrion concentrations below the neighborhood of the isoelectric point is primarily due to the cation.