(3×10^{-7}) and of the ion H_2PO_4 (2×10^{-7}). Although the equilibrium in such a system at 40° C. may be somewhat different it is evident that this equilibrium is calculated almost perfectly to protect protoplasm from variation in neutrality. The variation in hydrogen and hydroxyl ionization can hardly be more than 5×10^{-7}.

The theory of the transport of carbonic acid is now being investigated in the light of this great variation of combined carbonic acid, and the variation which has been found in "acidosis."

59 (202)

The influence of adrenalin upon the venous blood flow.

By **RUSSELL BURTON-OPITZ.**

[*From the Physiological Laboratory of Columbia University, at the College of Physicians and Surgeons.*]

The blood flow in the femoral, external jugular and azygos veins was measured by means of the stromuhr described by the author. During the experiment, solutions of adrenalin were injected centrally to the stromuhr. The effect of the adrenalin showed itself in a retardation of the venous inflow which appeared in from 14–16 seconds after the injection. Considering the velocity of the venous blood stream, it must be assumed that the adrenalin did not produce its characteristic effect until it had reached the arterial side of the circulatory system. The experiments tend to disprove the existence of vaso-motor nerves in the central veins and the pulmonary circuit.

60 (203)

The viscosity of laked blood.

By **RUSSELL BURTON-OPITZ.**

[*From the Physiological Laboratory of Columbia University, at the College of Physicians and Surgeons.*]

It was found that the viscosity of laked blood prepared by the process of freezing, is very much less than the viscosity of defibrinated blood. The specific gravity was only slightly lessened.

Examples of the experimental data are appended:

Defibrinated Blood		Laked Blood	
Spec. Grav.	Viscosity	Spec. Grav.	Viscosity
1.0566	665.74	1.0563	982.35

61 (204)

The determination of ammonia and urea in blood.

By **W. McKIM MARRIOTT** and **C. G. L. WOLF.**

[*From Cornell University Medical College, New York City.*]

Ammonia is determined by distillation in vacuo. 100 c.c. of blood are treated with 50 c.c. of saturated sodium chlorid solution and 250 c.c. of methyl alcohol are added to the mixture. The precipitate formed is finely granular. The residue is filtered off in a filter press, and the filtrate distilled for 40 minutes, with the temperature of the water bath at 40–50°C. The receivers are charged with $n/50$ sulphuric acid, and the acid titrated with $n/50$ sodium hydroxid free from carbonate. Sodium alizarin sulfonate is used as an indicator. The results are perfectly accurate.

The residue after distillation is made acid with hydrochloric acid, evaporated and hydrolyzed with 10 grams of glacial phosphoric acid at 150°C. The ammonia formed from the urea is then distilled into $n/50$ acid. The duplicates have shown very satisfactory agreement, but it is quite certain that not all the urea which is added to a sample of blood is recovered. It is probable that the carbohydrates in the residue combine with the urea at the temperature of hydrolysis and prevent the formation of ammonia.

62 (205)

The resolution of fibrinous exudates, with exhibition of specimens.

By **EUGENE L. OPIE.**

[*From the Rockefeller Institute for Medical Research.*]

The purpose of the experiments which are described has been to determine the part played by enzymes in the resolution of a fibrinous exudate. When turpentine is injected into the subcutaneous tissue of the dog, an abscess results, but when an equal