These experiments indicate that there is some agent present in the blood serum of an individual with pernicious anemia which affects the red cells to give them the characteristic decreased fragility to hypotonic salt solution, and this agent may be present in an amount sufficient to have an appreciable effect when the serum is diluted a thousand times.

In an earlier paper it was reported[2] that blood cells treated with a weak solution of castor oil soap showed, before the liberation of hemoglobin, the decreased fragility to hypotonic salt solution characteristic of pernicious anemia. This would indicate that the substance in pernicious anemia serum which brings about the decrease in fragility of normal cells when immersed in it, may be the hemolytic agent responsible for the anemia.

150 (2673)

The effect of quinidine on interauricular conduction and irritability in the terrapin's heart.

By ARTHUR D. HIRSCHFELDER and CHARLES CERVENKA.

[*From the Department of Pharmacology, University of Minnesota, Minneapolis, Minn.*]

Numerous investigators have demonstrated that quinidine decreases the irritability of the heart muscle and the auriculo ventricular conduction. We have recorded the contractions of both auricles in the terrapin, and find that, although much stronger stimuli (rhythmic make-and-break shocks) are required to cause extrasystolic responses after intraventricular injections of 1-2 mg. quinidine sulphate than before, there is no marked disturbance of conduction of spontaneous contractions or of rapid rhythmic extrasystoles from right auricle to left auricle. This indicates that quinidine depresses irritability more than it depresses intra- and inter-auricular conductivity; and renders it probable that in auricular fibrillation it rather suppresses the genesis of ectopic impulses than that it blocks the conduction of circus move-

[2] Green and Evans, PROC. SOC. EXP. BIOL. AND MED., 1923, XV, 290-291.

ments when once generated. Our results are in accord with the investigations of Hirschfelder[1] in 1908, which indicated that increased irritability of the heart muscle is one of the important factors in the genesis of auricular fibrillation.

151 (2674)

The effect of pituitrin on blood and on lymph and urine production.

By E. C. BAYLEY, J. C. DAVIS, W. WHITMAN, and F. H. SCOTT.

[*From the Department of Physcology, University of Minnesota, Minneapolis, Minn.*]

The diuretic action of pituitary extract described first by Magnus and Schäfer[1] has since been observed by many. More recently an anti-diuretic action of this extract has been observed, especially in connection with *diabetes insipidus,* and in relation to water intoxication. (For literature see Weir, Larson and Rowntree.[2]) On account of its diuretic action one might expect some effect on the composition of the blood. Underhill and Pack[3] and Mackersie[4] observed a dilution of the blood after pituitrin injection, but only a few experiments were made. Rowntree,[2] however, observed no change in blood volume, and Lamson,[5] who injected physiological salt along with pituitrin observed no change with small doses, but found that after large doses of pituitrin, the physiological salt did not leave the blood as it normally does, but kept the blood diluted for hours.

We have followed the concentration of the blood in 20 dogs after pituitrin injection, using 2 or 3 cc. of Parke Davis's ob-

---

[1] Hirschfelder, A. D., *Bull. Johns Hopkins Hospital,* 1908, xxix.

[1] Magnus, R., and Schäfer, E. A., *J. Physiol.,* 1901, xxvii, 9.

[2] Weir, J. F., Larson, E. E., and Rowntree, L. G., *Arch. Int. Med.,* 1922, xxix, 306.

[3] Underhill, F. P., and Pack, G. T., *Am. J. Physiol.,* 1923, lxvi, 520.

[4] Mackersie, W. G., *J. Pharmacol. and Exp. Therap.,* 1924, xxiv, 83.

[5] Lamson, P. D., Abt, A. F., O. Osthuisen and Rosenthal, S. M., *J. Pharmacol. and Exp. Thearp.,* 1923, xxi, 401.