

4. No evidence has been obtained that after section of the nerves of one adrenal, any compensatory increase in the rate of liberation of epinephrin from the other gland occurs. The fact that section of one splanchnic diminishes the discharge of epinephrin by a half, without causing any material fall of blood pressure, affords additional evidence that the epinephrin discharged by the adrenal veins is not directly a factor, or at least not an important one in maintaining the blood pressure.

### 50 (1228)

**The proportion in which adrenalin distributes itself between corpuscles and serum in relation to the technique of testing for epinephrin in blood.**

By G. N. STEWART and J. M. ROGOFF.

*[From the H. K. Cushing Laboratory of Experimental Medicine of Western Reserve University, Cleveland, Ohio.]*

1. When adrenalin was added to defibrinated blood, and the blood centrifuged after an hour, the serum was found by the colorimetric method of Folin, Cannon and Denis, to contain practically the whole of the added adrenalin.

3 c.c. adrenalin solution (Parke, Davis & Co.), corresponding to 2.64 mg. epinephrin when assayed colorimetrically, was added to 30 c.c. cat's defibrinated blood. Correcting for the small amount of color given by the serum itself in the test, the amount of adrenalin found in 10 c.c. of the serum separated from the adrenalin blood corresponded to 1.37 mg. epinephrin. The proportion by volume of serum in the blood was 62 per cent. The amount of serum in 30 c.c. of the adrenalin blood would, therefore contain  $1.37 \times 30 \times 62/100 = 2.55$  mg. adrenalin, *i. e.*, all the adrenalin added was in the serum.

2. The same result was obtained by assaying the adrenalin in the serum by injection into a pithed cat (method of Elliott). The serum gave a rise indicating, when compared with that given by a known amount of adrenalin in control serum, that 10 c.c. of it contained 1.32 mg. adrenalin. This compares with 1.37 mg. by the colorimetric method. The adrenalin blood gave a rise of blood pressure less than that given by the serum and corresponding to the concentration of adrenalin in it. The sediment, which of

course contained a very small proportion of serum, gave no measurable rise.

3. Similar results were obtained (with dog's blood to which adrenalin had been added) on segments of rabbit's intestine and uterus. The sediment gave a small inhibition of the intestine and a small increase of tone of the uterus as compared with the serum. The effect of the adrenalin blood was intermediate in amount.

4. The distribution of the naturally secreted epinephrin in the blood from the adrenal veins (of the dog) was also investigated with the same result. Only the rabbit intestine and uterus were employed, the other methods not being sufficiently sensitive for the small concentrations found in blood. In one experiment the concentration of epinephrin in the blood was assayed at 1:8,000,000, in the serum at 1:3,000,000. The sediment gave practically nothing. It so happened that the blood used was extremely rich in corpuscles, a circumstance favorable rather than otherwise for testing the point in question, as the serum would be more than ordinarily rich in epinephrin as compared with the blood, if all the epinephrin is contained in the plasma. The proportion of serum by volume in the blood was 36 per cent. On the hypothesis that all the epinephrin was in the serum, this would give  $1:100/36 \times 3,000,000$ , *i. e.*, 1:8,300,000 as the concentration in the blood.

5. When search is being made for the minute quantities of epinephrin present in blood, serum (or plasma) should, in general, be preferred to blood in making the tests.

#### 51 (1229)

### The influence of intravenous inoculations of cholesterin upon blood cells.

By OSKAR KLOTZ and MARY W. SPENCER.

[From the Pathological Laboratories, University of Pittsburgh, Pittsburgh, Pa.]

Some years ago (1907) Talquist believed that he had found the harmful substance present in the *Bothriocephalus latus* leading to progressive anemia. The substance which he isolated from these