

explanation can be given for these results at the present time.

In every case where there was obtained a test for *v*<sup>+</sup> substance there was also obtained a test for *cn*<sup>+</sup> substance, giving further indication of their close chemical relationship. Likewise, in all tests which were cross comparable, there always resulted a greater modification of *v bw* eyes than of *cn bw* eyes.

Acknowledgment is made to Mr. Leigh Chadwick of Harvard University for supplying some of the insects used in this test.

*Summary.* The diffusible substances concerned in eye color development in *Drosophila* are widely distributed throughout the insect group. They are probably normal constituents of insect tissues only, since tests in other animals have been entirely negative.

Tissues producing a modification of *v bw* eyes also produce a modification of *cn bw* eyes. In all cross comparable cases there has resulted a greater modification of *v bw* eyes than of *cn bw* eyes.

#### 10448 P

#### Depression of Polycythemia by Choline Hydrochloride.

JOHN EMERSON DAVIS. (Introduced by C. S. Leonard.)

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The author<sup>1</sup> presented work which showed that the feeding of raw beef or hog liver to polycythemic (experimental) dogs caused a prompt reduction in their erythrocyte numbers, by depressing hemopoiesis.

Recently, Jacobs<sup>2</sup> has reported that liver extract, prepared for oral use, contains at least 1% of choline.

This report led us to the investigation of the effect of orally administered choline hydrochloride upon polycythemic dogs. Polycythemia was produced experimentally in 2 dogs by placing them for 6 hours daily in a low pressure chamber in which the environmental air pressure was reduced to about 430 mm of mercury by a motor driven vacuum pump. Within 10 days, this procedure had induced consistent increases (27 and 30%) in the erythrocyte numbers of the animals when in an approximately basal state. The hemoglobin percentage (Sahli) was increased correspondingly and reticulocytosis occurred.

<sup>1</sup> Davis, J. E., *Am. J. Physiol.*, 1938, **122**, 397.

<sup>2</sup> Jacobs, H. R., *J. Lab. and Clin. Med.*, 1938, **24**, 128.

When 100 mg of choline hydrochloride per day was administered orally, prompt reductions (of 15 and 20%) in the red cell counts occurred within 3 days, in spite of daily exposure of the animals to low atmospheric pressure. Reticulocyte percentages were also reduced, but the total leukocyte counts did not change significantly. Upon cessation of choline feeding, the erythrocyte numbers returned to their polycythemic values.

In 2 other dogs, the erythrocyte numbers were increased by 15% by daily oral administration of 8 mg of cobalt chloride per kg of body weight, over periods of 8 to 10 days (for details of method see reference to the author<sup>3</sup>). Upon feeding 8 mg of choline hydrochloride per kg of body weight per day, in 1% solution by stomach tube, in addition to cobalt, there was a prompt reduction of the erythrocyte numbers to 4 and 6% below normal in 3 days. The reductions in erythrocyte numbers, reticulocyte and hemoglobin percentages persisted for 6 days during which choline was fed. After discontinuation of the choline, these values gradually increased, over a period of 5 days, to their polycythemic values. The total leukocyte counts did not change significantly throughout these experiments.

The same dose of choline (8 mg per kg) was administered to 2 normal dogs over a period of 6 days, and did *not* change their normal erythrocyte numbers significantly.

These experiments indicate that the oral administration of choline hydrochloride depresses hematopoiesis in polycythemic dogs, and tends to return the red cell number to normal.

#### 10449

### Effect of Certain Posterior Hypophyseal Extracts on Ciliary Motion.

AUSTIN E. SMITH. (Introduced by E. M. Boyd.)

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This report deals with an attempt to ascertain the effect of certain pituitary extracts on the rate of ciliary movement of the esophageal and pharyngeal mucosa of healthy frogs (*Rana pipiens*), weighing 25 g each. The brain and spinal cord were carefully pitied, the lower jaw removed, and the esophagus and stomach exposed by cutting through the pectoral girdle. The pharynx and esophagus

<sup>3</sup> Davis, J. E., *PROC. SOC. EXP. BIOL. AND MED.*, 1937, **37**, 96.