Isobarbituric acid was prepared according to Davidson and Baudisch.[3] The purity of the compound was checked by analysis.

The following analytical methods were used: Total N, Kjeldahl; urea, Van Slyke's gasometric method[4]; inorganic and ethereal sulfur, Folin's method[5]; total sulfur, Denis' modification of Benedict's method.[6]

Isobarbituric acid was fed altogether 9 times to rabbits. Three representative experiments are given in Table I. We find a rise in the urea output, a drop in the inorganic sulfur fraction, and a corresponding increase in the ethereal sulfates. These observations indicate that the metabolism of isobarbituric acid in the rabbit follows the same path as in the adult dog and in man.

8194 C

Serum Phosphatase in Normal Young Rabbits.

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In connection with studies on certain familial bone abnormalities of the rabbit, the sera of animals presenting the deformities under investigation were analyzed for their phosphatase content. For comparative purposes similar determinations were made on a group of normal animals, and these normal findings form the basis of the present report.

The rabbits varied in age from 15 to 71 days, with a mean age of 39.3 ± 15.3 days. They were all vigorous, healthy young, with no clinical evidence of bone lesions, and were derived from lines unrelated to the group with bone pathology. All were caged with their mother or foster-mother. The diet consisted of maternal milk supplemented in varying degrees depending on the age of the animal by a mixture of grains and grain products, with alfalfa, mineral salts and a molasses binder. The technique employed in the serum phosphatase determinations was that described by Bodansky.* [1] Except

[3] Davidson, D., and Baudisch, O., *J. Biol. Chem.*, 1925, **64**, 619.

[4] Van Slyke, D. D., *J. Biol. Chem.*, 1927, **73**, 695.

[5] Folin, O., *J. Biol. Chem.*, 1905, **1**, 131.

[6] Denis, W., *J. Biol. Chem.*, 1910, **8**, 401.

* The author wishes to thank Dr. Bodansky for personally demonstrating the technique of this procedure.

[1] Bodansky, A., *J. Biol. Chem.*, 1932, **99**, 97; *ibid.*, 1933, **101**, 93.

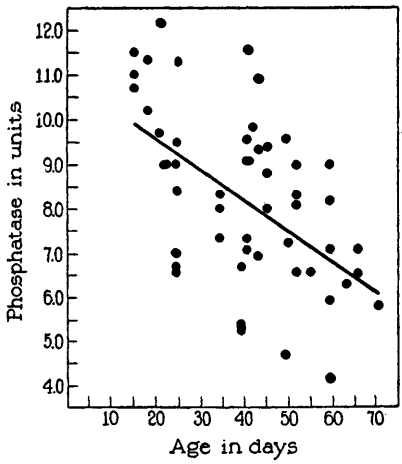

FIG. 1.

The relation between phosphatase and age in healthy young rabbits. $r_{pa} = -0.5373 \pm 0.0986$. Regression equation: $x = 10.90 - 0.067A$.

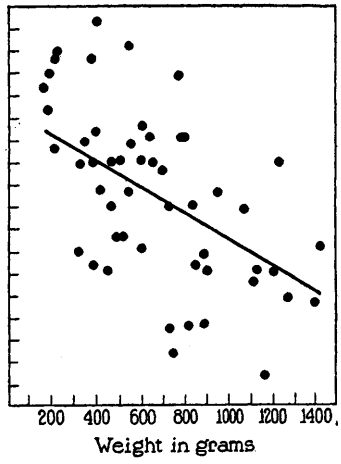

FIG. 2.

The relation between phosphatase and weight in healthy young rabbits. $r_{pw} = -0.5894 \pm 0.0905$. Regression equation: $x = 10.46 - 0.0032W$.

x = estimated value for phosphatase. A = age in days. W = weight in grams.

in a few instances where the quantity of serum was insufficient for the purpose, all determinations were made in duplicate.

The results are shown in the familiar scatter diagrams; in Fig. 1 they were plotted against age, and in Fig. 2 against weight. The mean value for the 53 determinations was 8.3 ± 1.9 units. It is seen that the phosphatase values decrease with increasing age and weight. The relationship between phosphatase and age was found to give a significantly negative correlation coefficient of -0.5373 ± 0.0986. A significant negative correlation coefficient of -0.5894 ± 0.0905 was also obtained between serum phosphatase and weight. The difference between these 2 coefficients is statistically insignificant.

The regression equation for phosphatase on age was $x = 10.90 - 0.067A$, where x is the estimated value for units of serum phosphatase, and A is age in days. This equation was employed in plotting the points of the solid line shown in Fig. 1. That it is applicable only within the age limits of the group included in the analysis was shown by determinations on 9 normal rabbits 12 and 13 days old. A mean value of 17.2 ± 2.4 units was obtained, whereas the equation predicts a significantly lower value of 10.0 units. In addition to this disparity between actual and predicted values in

animals younger than those shown in the scatter diagram, differences were also noted between observed and predicted values in older animals. A few determinations on adult animals indicate that when growth ceases, the phosphatase values tend to remain at a constant level ranging between 4 and 8 units.

Summary. Within the age limits of 15 and 71 days the serum phosphatase values for healthy rabbits describe a statistically significant linear decrease with increasing age and weight.

8195 P

Effect of Spontaneous and Induced Infections upon Development of Mouse Sarcoma 180.*

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It has been recently observed that bacterial factors capable of eliciting the phenomenon of local skin reactivity to bacterial filtrates also produce, upon intravenous injections, selective hemorrhagic necrosis in transplantable malignant tumors of guinea pigs, mice and rats (Gratia and Linz,[1] Shwartzman and Michailovsky,[2] Duran-Reynals,[3] and Apitz.[4] The work described deals with the effect of spontaneous and induced bacterial infections upon the development of mouse sarcoma 180.

The antagonistic and inhibitory effect of Trypanosomes, *Bacillus tuberculosis, Bacillus bulgaricus thermophilicus* and *B. anthrax* upon the development of mouse and rat transplantable tumors was previously reported by Daels,[5] Karczag, Csaba and Nemeth,[6] Roskin and Exempliarskaia,[7] and Boccolari-Segolini.[8]

Growth of Sarcoma 180 in normal mice. In a healthy stock of

* This investigation has been aided by a grant from the Josiah Macy, Jr., Foundation.

1 Gratia and Linz, *C. R. Soc. Biol.*, 1932, **108**, 427.

2 Shwartzman, G., and Michailovsky, Nicholas, PROC. SOC. EXP. BIOL. AND MED., 1932, **29**, 737.

3 Duran-Reynals, D., PROC. SOC. EXP. BIOL. AND MED., 1934, **31**, 341.

4 Apitz, Kurt, *Z. f. Krebsforst.*, 1933, **40**, 50.

5 Daels, F., *Arch. Hyg.*, 1910, **72**, 257.

6 Karczag, L., Csaba, M., Nemeth, L., *Z. f. Krebsforst.*, 1931, **33**, 371.

7 Roskin, G., Exempliarskaia, E., *Z. f. Krebsforst.*, 1931, **34**, 628.

8 Boccolari-Segolini, A., *Ateno parmense*, 1933, **5**, 315.