

trols. The 24-hour reaction was recorded but was not used as a criterion of sensitivity in this study.

The vaccines as a rule contained around three billion organisms to the cc. Tests were made with serial dilutions, using a 1/10, 1/100, 1/1000 dilution of these vaccines.

TABLE III.  
Agglutinations.

	Case 1			Case 2			Case 3			Case 4		
	1/40	1/80	1/160	1/40	1/80	1/160	1/40	1/80	1/160	1/40	1/80	1/160
<i>B. Hiss</i> (Stock)	—	—	—	—	—	—	Not done			—	—	—
<i>B. Duval</i> (Stock)	—	—	—	Not done			" "			—	—	—
<i>B. Flexner</i> (Stock)	—	—	—	—	—	—	Pos.	Pos.	—	—	—	—
<i>B. Shiga</i> (Stock)	—	—	—	—	—	—	Pos.	—	—	—	—	—
<i>B. Shiga</i> (Case 1)	Pos.	Pos.	—	—	—	—	Not done			—	—	—
<i>B. Shiga</i> (Case 2)	—	—	—	Pos.	Pos.	Pos.	" "			—	—	—
<i>B. Flexner</i> (Homologous)	—	—	—	—	—	—	—	—	—	Pos.	Pos.	Pos.

*Summary.* We believe we have demonstrated atopic (anaphylactic type) sensitivity for *B. dysenteriae*, occurring during course of infestation or infection of the bowel with these organisms. We know of no previous report. Cook's postulates have been fulfilled by: 1. Positive cutaneous reactions with the vaccines. 2. Reproduction of symptoms by subcutaneous injections of the vaccines. 3. The organism was isolated from the individual (in 3 cases; in the 4th serological evidence indicated the patient's contact with the organism).

## 7972 P

### Sugar Utilization in Hypophysectomized Rabbits.

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The fact that serious hypoglycemia may develop in hypophysectomized rabbits and dogs is well known.<sup>1-4</sup> In preliminary experiments it was found that glucose must be administered to fasted

<sup>1</sup> Corkill, A. B., Marks, H. P., White, W. E., *J. Phy.*, 1933, **80**, 193.

<sup>2</sup> White, W. E., *Proc. Royal Soc. (Series B)*, 1933, **114**, 64.

<sup>3</sup> Mahoney, W., *Am. J. Phy.*, 1933, **109**, 3.

<sup>4</sup> D'Amour, M. C., Keller, A. D., *Proc. Soc. Exp. Biol. and Med.*, 1933, **30**, 1175.

hypophysectomized rabbits to prevent hypoglycemic convulsions and death. The animal requires large amounts of sugar even when the blood sugar level is low. The work reported here was concerned with the measurement of this requirement. The aim was to determine the minimum amount of glucose necessary to maintain a proper blood sugar level in fasted hypophysectomized rabbits. After a 3-day fast the pituitary was removed by an oral approach (Cope's<sup>5</sup>) modification of White's method.<sup>2</sup>

Frequent blood sugar estimations were carried out after the hypophysectomy. When the level had fallen to 80 mg. % or lower sufficient 10% glucose was given intravenously every hour thereafter to keep it from going lower. The rate of injection was adjusted according to whether the previous blood sugar had indicated the level was rising or falling.

The interval between time of operation and time when the blood sugar began to drop varied in different rabbits from 11 to 32 hours. The amount of glucose required increased during the first 5 to 8 hours thereafter, by which time a maximum requirement was attained. There was little increase above this. Glucose was given in some cases by continuous intravenous injection. In a given animal, the amount required was the same whether the glucose was given at one hour intervals or by continuous injection. Urinary determinations for sugar were uniformly negative. The amounts of glucose which had to be injected during the period of maximum need is recorded in grams per kilo body weight per hour in Table I.

TABLE I.

Wt. kilo	Hr. after hypophysectomy when blood sugar began to fall	Hr. after hypophysectomy when rate was determined	Glucose intravenously in gm. per kilo body wt. per hr.	Remarks
1.59	12	18	.503	6 hr. continuous
2.27	18	27	.554	5 " "
2.84	18	24	.601	6 " "
3.30	24	29	.642	6 " "
1.87	12	22	.671	6 " "
1.96	16	32	.510	3 " intermittent
1.70	21	23	.617	5.5 " continuous
1.82	—	18	.527	5 " intermittent

It is apparent that these animals require large amounts of glucose. It can hardly be maintained that injection stimulated the utilization of glucose since the blood sugar level was below normal in nearly all instances. Work is now being carried out with the purpose of de-

<sup>5</sup> Personal communication.

termining the fate of this disappearing sugar: whether it is oxidized, converted to fat, deposited as glycogen or changed to some other complex.

## 7973 C

Mechanism of Ingression in the Egg of *Triturus Torosus*.\*

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In a previous paper<sup>1</sup> it was shown that the ventralmost surface of the zygote of the salamander, *Triturus torosus*, is carried into the interior of the egg sometime before gastrulation begins. Vitrally stained marks were placed on the lower (vegetal) surface of the zygote and development allowed to proceed for 24 to 30 hours. The marks were subsequently located in the uppermost portion of the blastula floor.

In the present experiments large, clear marks were placed on the ventral (vegetal) surfaces of eggs at successive stages of cleavage. The subsequent location of the stained materials was determined by dissecting the eggs in the mid-blastula stage. Observations were

TABLE I.  
Extent of Ingression of Vitrally-Stained Marks Placed upon the Ventral Surfaces of Eggs at Successive Stages of Development.

Stages of Development	Presence of Stained Cells in the Floor of Blastula		
	Upper Third	Middle Third	Lower Third
Uncleaved egg (zygote)	+	+	+
	(Fig. 1, A)		— in some cases*
First cleavage completed†	+	+	+
	A few cells in some		— in some cases*
Second cleavage completed†	+	+	+
	A few cells in some		
Third cleavage completed†	—	+	+
Early Blastula	(Fig. 1, B)	A few cells in some	+
Later "	—	—	+

\*The presence of stained material in the lower third of some eggs and its absence in others seems to be correlated roughly with the sizes of the stained marks. In several instances in which this point was observed specifically the positive cases were eggs with large stains.

†The term "completed" signifies that the cleavage furrow has reached the lower (vegetal) pole of the egg.

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<sup>1</sup> Schechtman, A. M., *Univ. Calif. Publ. Zool.*, 1934, **39**, 303.