that maternal whole blood, regardless of the mode of administration, is not as effective as vitamin K in raising the plasma prothrombin level. Because of the known relationships of reduced prothrombin levels to hemorrhagic disease of the newborn, it is suggested that treatment with vitamin K, which produces very rapid and significant elevations of the prothrombin, will prove much more effective than injections of maternal blood.

13057

Differential Cell Counts of Ant. Lobe of Pituitary Glands of Rats Showing Diabetic Traits.

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Recent reports[1-5] on studies of a strain of rats with diabetic traits have presented evidence of hyperfunction of anterior lobe of the pituitary gland. The purpose of this investigation was to study the anterior lobe of the pituitary gland of this strain by the method of cell enumeration. No critical cytological study was done.

Material and Methods. The pituitary glands of 15 sexually mature male rats of the "diabetic" strain, and of an equal number of a "non-diabetic" strain matched in sex, age and weight, were studied. The average age of the "diabetic" rats was 233 days; of the controls, 212 days. The average weight of the "diabetic" rats was 451 g; of the controls, 347 g. The glands were not weighed. They were fixed in Bouin's solution modified according to Gomori,[6] whose method for fixing pancreatic islets was followed. The whole gland was embedded in paraffin at 57°C. Serial sections were cut in the coronal plane at 5 microns and all sections were mounted. The sections were stained by Mallory's Acid Fuchsin-Aniline Blue method as modified by Crooke and Russell.[7] We found that better results were

1 Cole, Versa V., and Harned, B. K., *Endocrinology*, 1938, **23**, 318.

2 Harned, B. K., and Cole, Versa V., *Endocrinology*, 1939, **25**, 689.

3 Cole, Versa V., and Harned, B. K., PROC. SOC. EXP. BIOL. AND MED., 1939, **42**, 738.

4 Harned, Ben K., and Cole, Versa V., *Science*, 1940, **92**, 361.

5 Cole, Versa V., Harned, Ben K., and Keeler, Clyde E., *Endocrinology*, 1941, **28**, 25.

6 Gomori, G., *Am. J. Path.*, 1939, **15**, 498.

7 Turner, O. A., *J. Lab. and Clin. Med.*, 1939, **24**, 997.

obtained if the sections were stained in the acid fuchsin and the aniline blue solutions kept at 57°C. We did not stain with hematoxylin.

The counting technic was briefly as follows: A Whipple micrometer was placed in a No. 10 ocular. Using this with a 1.25 mm oil immersion objective and a mechanical stage every fifth section was studied. Differential counts were made in every fifth field in the transverse and vertical diameters. The average number of cells counted in each gland of the "diabetic" rats was 4,009 cells; in that of the controls 3,251 cells. Although our technic differed from that of other investigators in that we limited our count to cells in transverse and vertical diameters we believe statistical analysis shows that the fields counted were representative of the whole gland and that for purposes of comparison of the cell percentages the method is satisfactory.

TABLE I.
Differential Cell Counts of Anterior Lobe of the Pituitary Gland.

"Diabetic" rats (males)					Controls (males)				
		% of cells					% of cells		
Age in days	Body wt	Eosinophiles	Basophiles	Chromophobes	Age in days	Body wt	Eosinophiles	Basophiles	Chromophobes
398	565	34.3	14.3	51.4	367	350	35.2	10.0	54.8
380	520	35.9	11.2	52.9	367	360	52.4	8.9	38.7
264	420	65.4	3.9	30.7	217	270	42.6	13.5	43.9
245	470	46.9	9.1	44.0	205	315	52.0	10.6	37.4
206	430	48.5	20.8	30.7	199	320	50.3	5.7	44.0
215	360	56.4	7.9	35.7	197	320	58.1	8.3	33.6
210	430	52.1	55.9	31.9	207	350	46.3	10.0	43.6
210	540	38.4	27.0	34.6	208	380	43.0	18.4	38.6
210	390	45.4	9.3	45.3	208	390	44.7	17.0	38.3
180	520	44.1	16.8	39.1	183	415	34.5	27.4	38.1
180	450	39.9	26.4	33.7	177	350	35.9	24.2	39.9
178	480	47.9	18.6	33.5	178	325	41.4	12.8	45.8
144	400	45.7	14.7	39.6	151	350	27.8	38.5	33.6
178	420	41.0	13.5	45.5	151	300	53.2	9.1	37.7
144	380	49.3	10.7	40.0	151	360	55.8	10.4	33.9

TABLE II.
Statistical Analysis.

Cell types	Min.	Max.	Median	Mean	Stand. dev.	Coeff. of variation	Standard error
			A. "Diabetic" Rats.				
Eosinophile	34.3	65.4	45.7	46.1	8.1	17.5	2.2
Basophile	3.9	27.0	14.3	14.7	7.5	51.4	2.0
Chromophobe	30.6	52.9	39.1	39.2	7.2	18.4	1.9
			B. Controls.				
Eosinophile	27.8	58.1	43.7	44.8	9.4	20.1	2.1
Basophile	5.7	38.5	10.6	15.0	7.9	52.5	2.1
Chromophobe	33.6	54.8	38.6	40.1	5.7	14.3	1.5

Conclusion. There is no significant difference between the percentages of cell types in the anterior lobe of the pituitary glands of 15 sexually mature male rats with diabetic traits and those of controls.

13058

Specific Neutralization of Cotton Rat Strains of Poliomyelitis Virus.*

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Paralysis has been produced in the eastern cotton rat by injecting combinations of poliomyelitis virus and "enteric toxin filtrate."[1] (Virus strains isolated were: Flexner's M. V., Flexner's Philadelphia, and SK New Haven.) In addition, Armstrong's and Jungeblut's strains have been carried 30 and 20 generations in rats, respectively. Flexner's M.V. rat-adapted strain was found to be specifically neutralized by poliomyelitis antiserums.[2] This paper is a report on neutralization experiments with Flexner's Philadelphia, Armstrong's Lansing and Jungeblut's strains.

The set-up of the experiments was similar to those previously reported.[2] There were 5 groups of animals, 30 in each group. Those in Group A were injected with a mixture of the antiserums used—equal amounts of serum and saline. Group B received 4% virus in saline mixed with an equal amount of serum termed "early horse serum" obtained from horses which were found lacking in virucidal antibodies for poliomyelitis virus.[3] Group C received 4% virus in saline and an equal amount of serum termed "convalescent horse serum" obtained from the same horses a few years later after they had been injected with virus.[3] Group D received 4% virus in saline plus an equal amount of pooled human convalescent poliomyelitis serum, and Group E, 4% virus plus saline to make a 2% suspen-

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1 Toomey, John A., and Takacs, William S., PROC. SOC. EXP. BIOL. AND MED., 1940, **45**, 364.

2 Toomey, John A., and Takacs, William S., PROC. SOC. EXP. BIOL. AND MED., 1941, **46**, 319.

3 Toomey, John A., *Am. J. Dis. Child.*, 1937, **52**, 1492.