TABLE II.
Summary of Results Listed in Table I.

	Group A Control	Group B Serum Treated	Group C *P*-amino-benzenesul-fonamide Treated	Group D Combination Drug and Serum Treated
	%	%	%	%
Mortality rate	93	21	21	14
Bacteremia	64	7	7	0
Peritonitis	86	0	7	0
Empyema	50	14	21	0
Absence of lobar or broncho-pneumonia microscopically	7	50	64	79
Degree* of microscopic pulmonary involvement	3.9	3.6	2.9	2.3

* These values represent the group-average of the number of plus signs found in the columns "Microscopic Pneumonia" of Table I.

It appears, therefore, that in the relative dosages employed in this experiment, the efficacy of the drug is as great as, if not greater than, that of the specific serum. The data also show that the best therapeutic results were obtained by a combination of serum and drug, indicating that the two methods of treatment are synergistic. On the basis of the excellent therapeutic results here obtained, it is suggested that this drug be tried in human Type I pneumonia in conjunction with the specific antiserum and particularly in cases where the antiserum is not available. This suggestion is supported by the parallelism which has been demonstrated with *p*-aminobenzenesulfonamide therapeusis of both rat and human Type III pneumococcal pneumonia and also by the fact that at times hemolytic streptococci are known to complicate pneumococcal pneumonias.

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Effect of Hypophysectomy on Blood Lactic Acid of *Rhesus* Monkeys.

ALEITA H. SCOTT. (Introduced by H. B. Williams.)
From the Department of Physiology, Columbia University.

Work on blood sugars in normal and hypophysectomized monkeys has been recently reported (Smith, *et al.*[1]). Blood lactic acid was simultaneously determined in many of these samples.

1 Smith, P. E., Dotti, L., Tyndale, H. H., and Engle, E. T., PROC. SOC. EXP. BIOL. AND MED., 1936, **34**, 247.

The material here reported was obtained from 15 normal, 11 completely hypophysectomized and 4 partially hypophysectomized monkeys. The blood sugar values for these individuals are also included for comparison. The blood lactic acid was determined by a modification of the method of Friedman, Cotonio and Shaffer (Scott[2]). Blood was drawn from the heart into a mixture of 50% NaF and Na-oxalate. All of the animals were starved from 16 to 18 hours.

TABLE I.
Blood Sugar and Blood Lactic Acid on Heart Blood Taken 16-18 Hours After Feeding, Both Before and After Complete Hypophysectomy.

Monkey No.	Before Operation No. of samples	Sugar mg. %	Lactic acid mg. %	After Operation No. of samples	Sugar mg. %	Lactic acid mg. %
251	1	86	151	2	50	55
253	3	118	167	5	57	27
258*	3	107	109	4	56	49
259	3	107	75	3	56	32
293	2	108	87	1	76	57

*Male castrate.

The high values for lactic acid in the monkey may be due to the muscular activity exerted by the animal before capture and to the muscular tension developed while the animal is being held during the drawing of the blood. The animals were chained so that there was a minimum of effort during their capture. However, the monkey in captivity is still a wild animal and opposes restraint.

Hypophysectomy is followed in the monkey by a fall in the blood sugar (Smith, *et al.*[1]). The blood lactic acid falls markedly also.

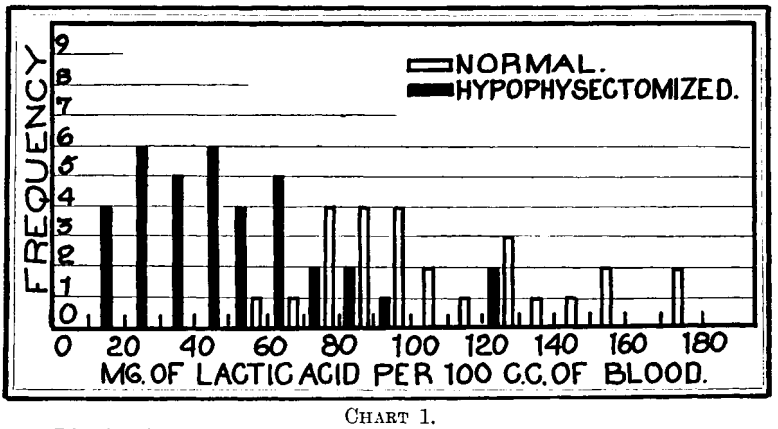

CHART 1.
Distribution of blood lactic acid in monkeys, starved 16-18 hours.

[2] Scott, A. H., *J. Biol. Chem. Proc. Am. Soc. Biol. Chem.*, 1936, **8**, lxxxvii.

It is to be noted that this lower value of the blood lactic acid is still 5 times that for venous blood in man under basal conditions. There is, however a fairly good separation of the values in the normal and operated animals when arranged in a scatter chart (Chart 1). Those animals which were later found to have been incompletely hypophysectomized showed intermediate values for the lactic acid in like manner to that found to be true for the blood sugar (Smith, *et al.*)

TABLE II.
Summary of All Blood Lactic Acid Determinations.*
(Heart Blood, Animals Starved 16-18 hours).

	No. of samples	mg./100 cc.	ε	ε_M
Normal Monkeys.				
Blood Lactic Acid	26	104	34.4	6.5
" Sugar	26	108	19.5	3.8
Incomplete Hypophysectomy.				
" Lactic Acid	25	75	27.7	5.5
" Sugar	25	88	14.7	2.9
Animal No. 261, 1 mm. tissue remaining after operation.				
" Lactic Acid	3	161	43.1	24.9
" Sugar	3	86	2.2	1.3
Complete Hypophysectomy.				
" Lactic Acid	37	50	27.5	4.5
" Sugar	37	59	17.1	2.7

*The formula $\varepsilon = \sqrt{\frac{\Sigma d^2}{N-1}}$ was used, giving the mean deviation rather than the standard deviation (σ) because of the small number of cases studied. (Scott.[3])

Animal No. 261 was placed separately in the table. A small fragment of tissue one mm. in diameter was present after the operation. The blood sugar was about the same as for the incompletely hypophysectomized animals but the lactic acid was higher than the average of the normal monkeys.

[3] Scott, E. L., *J. Biol. Chem.*, 1927, **73**, 81.