The data in Table I show that the stock XXII pneumococci and the "Neufeld positive" organisms (those obtained from the sulfanilamidopyridine treated mouse) invaded the blood stream quickly and multiplied equally well. "Neufeld negative" organisms could not be cultured from the blood or peritoneal washings at any time.

Summary. Experimental infections with Type XXII pneumococcus, which are refractory to sulfanilamide therapy, can be treated satisfactorily with sulfanilamidopyridine. The amount of drug required for effective treatment is larger than that necessary in Types I, VII, and VIII infections (Whitby). Avirulent decapsulated Type XXII pneumococci have been isolated from the blood of mice treated with sulfanilamidopyridine. This supports the suggestion of Whitby, and Telling and Oliver that the drug exerts a definite action on the pneumococcus capsule.

10311

Sulfanilamide in the Treatment of Experimental Trypanosomiasis of Rats.

JOHN A. KOLMER AND ANNA M. RULE.

From the Research Institute of Cutaneous Medicine, Philadelphia, Pa.

The reputed effectiveness of sulfanilamide in the treatment of malaria induced us to determine whether or not the compound was therapeutically effective in the treatment of trypanosomiasis of rats. Buttle, Gray and Stephenson[1] were unsuccessful with sulfanilamide therapy against malaria in canaries and *Trypanosoma equiperdum* infections of mice.

Sixteen white rats, weighing from 150 to 170 g, were inoculated intraperitoneally with approximately 500,000 *Trypanosoma equiperdum;* 24 hours later some showed a few trypanosomes in the tail blood. Treatment was started at this time, 4 receiving 0.08 g per kilo by intravenous injection 24, 30, 48, 54, 72, and 78 hours after inoculation; 4 were given 0.160 g and 4 given 0.200 g per kilo at the same intervals. Four were kept as untreated controls and all died of trypanosomiasis 4 to 5 days after inoculation; 3 additional animals were kept as drug controls and survived 8 days when the experiment was terminated.

[1] Buttle, G. A. H., Gray, W. H., and Stephenson, D., *Lancet*, 1936, **1**, 1286.

The results summarized in Table I indicate that sulfanilamide was completely ineffective as all treated animals succumbed to trypanosomiasis in 4 to 7 days in spite of the very large doses given, corresponding to as much as 4.8 to 12.0 g per 60 kilos for 6 doses in succession at intervals of 6 to 18 hours. The low toxicity of sul-

TABLE I.
Sulfanilamide by Intramuscular Injection in the Treatment of Rats Inoculated with *T. equiperdum.*

Rat No.	Dose, per kilo, g*	Exam. tail blood for trypanosomes; days after inoc.							
		1	2	3	4	5	6	7	8
1	.08	+§	++	++++	++++	D			
2	,,	—	+	+++	++++	++++	++++	D	
3	,,	+	++	++++	++++	D			
4	,,	—	++	++	++++	++++	++++	D	
5	.160	+	++	++++	D				
6	,,	+	++	++++	D				
7	,,	—	++	++++	++++	D			
8	,,	—	++	+++	++++	++++	D		
9	.200	+	++	++++	D				
10	,,	+	++	++++	D				
11	,,	—	++	++++	++++	D			
12	,,	—	++	++++	++++	++++	D		
13†	0	+	++	++++	D				
14	0	—	++	++++	++++	D			
15	0	+	++	++++	D				
16	0	—	++	++++	++++	++++	D		
17‡	.08	—	—	—	—	—	—	—	—
18	.160	—	—	—	—	—	—	—	—
19	.200	—	—	—	—	—	—	—	—

*24, 30, 48, 54, 72 and 78 hours after intraperitoneal inoculation with 500,000 *Trypanosoma equiperdum.*

†Rats 13, 14, 15 and 16 infection controls; no treatment.

‡Rats 17, 18 and 19 drug controls.

§+ = about 5 to 10 per field; ++ = 10 to 20 per field; ++++ = very large numbers; — = survived; D = died.

TABLE II.
Sulfanilamide by Oral Administration in the Treatment of Rats Inoculated with *T. equiperdum.*

Rat No.	Dose per kilo, g*	Tryp. tail blood; days after inoculation					
		1	2	3	4	5	6
1	.45	+†	+	++	++++	D	
2	.47	—	+	+	++	++++	D
3	.49	+	+	++	++++	D	
4	.5	+	—	++	++++	D	
5	.35	—	+	++	++++	++++	D
6	.2	—	+	++	++++	D	
7	Control	+	+	++	++++	D	
8	,,	—	+	++	++++	D	

*24, 30, 48, 72 and 78 hours after intraperitoneal inoculation with 500,000 *Trypanosoma equiperdum.*

†+ = about 5 to 10 per field; ++ = 10 to 20 per field; ++++ = very large numbers; D = died.

fanilamide for rats by intravenous injection is indicated by the survival of the drug controls.

Eight additional animals were inoculated intraperitoneally with approximately 500,000 *Trypanosoma equiperdum;* 2 untreated controls died on the fifth day after inoculation. The remaining 6 animals were given capsules of sulfanilamide powder in dose of 0.2 to 0.5 g per kilo 24, 30, 48, 72, and 78 hours after inoculation (Table II). All succumbed to trypanosomiasis in 5 to 6 days after inoculation, the doses corresponding to as much as 12.0 to 30.0 g per kilo of weight.

Summary. Sulfanilamide by intravenous and oral administration was ineffective in the treatment of *Trypanosoma equiperdum* infections of rats.

10312

Estrus-Inhibiting Effects of Inanition

MICHAEL G. MULINOS, LEO POMERANTZ, JANE SMELSER AND RAPHAEL KURZROK.

From the Departments of Pharmacology, and Biochemistry, and Obstetrics and Gynecology, the College of Physicians and Surgeons, Columbia University.

The effects of complete and partial starvation upon the estrous cycle of adult female rats were studied. Smears from the vaginal mucosa were taken for at least 2 weeks before any experimental procedures were instituted. Seven groups of 5 rats each were used. One group was kept as control; 2 groups received no food or water, and another only water at the onset of starvation; the fifth group was starved intermittently so that the loss of weight was more gradual. The remaining 2 groups were starved completely without water until they died. Each animal was weighed daily. The water and food consumption of the groups fed was recorded daily. It was found that the animals in all the starved groups eventually showed complete inhibition of the estrous cycle, and that the inhibition was roughly related to the loss in body weight, as shown in the table. When the inhibition of the estrous cycle was complete, all but 2 groups were fed again, with resulting return to the normal cyclical changes in the vaginal mucosa.

Experiments to Determine the Factors Involved. In analyzing the estrus-inhibiting effects of starvation, one must distinguish between