tribution of the 20 fatalities over the 8 weeks in question was fairly uniform (Table I).

In previous studies,[11] panmyelophthisis has been found to be a disease with seasonal predilections, but November and December represented months in which panmyelophthisis was a frequent complication. In the experiments described here, the total number of animals was essentially the same in the 2 periods before and after addition of nicotinic acid to the diet.

In view of these facts the observations here recorded seem to indicate in rats a close relationship between nicotinic acid and prevention of nutritional panmyelophthisis with all its manifestations.

Further experiments are required in order to establish definitely the prophylactic, and possibly also the therapeutic effect of nicotinic acid on the maturation of bone marrow.

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Preparation and Administration of Globulin from Rabbit Antipneumococcus Sera.

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Although rabbit antipneumococcus sera offer certain theoretical[1, 2, 3] and practical[4] advantages in pneumonia therapy their use has not been without danger, so that a simple, though incomplete, method of antibody purification might be of value. The following method of preparing globulin for therapeutic purposes has been in effective use at the Presbyterian Hospital and is novel only in the substitution of efficient centrifugation for dialysis in the removal of the sodium sulfate used for precipitating the globulin. Analyses, data on administration, and excerpts from patients' charts are given.

Sera and solutions were kept sterile; the water and 0.85% saline

1 Goodner, K., Horsfall, F. L., Jr., and Bauer, J. H., PROC. SOC. EXP. BIOL. AND MED., 1936, **34**, 617.

2 Heidelberger, M., Pedersen, K. O., and Tiselius, A., *Nature*, 1936, **138**, 165; Heidelberger, M., and Pedersen, K. O., *J. Exp. Med.*, 1937, **65**, 393.

3 Heidelberger, M., and Kendall, F. E., *J. Exp. Med.*, 1937, **65**, 647.

4 Goodner, K., Horsfall, F. L., Jr., and Dubos, R. J., *J. Immunol.*, 1937, **33**, 279, and references given there.

solution used were prepared with the precautions essential for safe intravenous use. Anhydrous sodium sulfate of the highest purity was sterilized by heat before use. The rabbit sera were allowed to stand in the cold for some weeks and freed from separated lipids and sediment. Antisera of a single type, containing 1.0 mg. of type-specific anticarbohydrate nitrogen* or more were pooled, diluted when necessary to reduce the antibody N content to 1.0 to 1.5 mg. per ml., and precipitated at 35-38°C. with an equal volume of filtered sodium sulfate solution saturated at the same temperature. After centrifugation at 3000-3500 r.p.m. the clear supernatant was drawn off and discarded; the precipitate was broken up and centrifuged again. The precipitate was washed with warm 60% saturated sodium sulfate solution and was repeatedly broken up and centrifuged until no more liquid could be obtained. The precipitate was dissolved in water, run through an ignited Chamberland L2 filter, and rinsed through with 0.85% saline solution. 1% by volume of 1% Merthiolate† was finally added. The solution may be heated at 56°.[4] Types I, II, and III antipneumococcus rabbit sera have been fractionated in this way.

TABLE I.
Data on Antibody Globulin Solutions.

Solution	Antipneumococcus Type	Antibody N in sera taken mg.	Antibody N recovered mg.	Total N in antibody globulin solution mg. per ml.	Type sp. precipitin N in antibody globulin solution mg. per ml.
1	I	211	161	5.39	1.31
2	I	640	532	6.74	1.48
3	II	193	171	4.18	1.07
4	III	343	290		1.36
5	III	190	153	5.41	1.02
6	I	214	166	2.42	0.94

We have been able to give full therapeutic doses of antibody within 2 hours without untoward reaction by diluting the requisite amount of globulin solution to 500 ml. with 0.9% saline and administering this as a continuous, slow intravenous infusion. Results in 5 cases are shown in Table II (on following page).

* Analyses according to (3) and earlier papers.

† Manufactured by Eli Lilly and Son, Indianapolis, Ind.

TABLE II.
Excerpts from Patients' Charts.

Patient	Pn. Type	Bacteremia	Administration of antibody (in 500 ml. saline)	Reaction	Result
F.H.	III	+	12/22/37 75 ml. (102 mg. antibody N) 40 min.	Mild chill. T 102°*	Blood culture sterile 12/23
			12/23/37 105 ml. (143 mg. antibody N) 95 min.	None	Recovered
G.B.	I	+	12/24/37 50 ml. (74 mg. antibody N) 100 min.	"	
			12/24/37 50 ml. (74 mg. antibody N) 120 min.	"	
			12/25/37 50 ml. (74 mg. antibody N) 135 min.	"	Recovered
E.M.	I	0	1/2/38 50 ml. (74 mg. antibody N) 220 min.	Slight urticaria. No rise in T.	
			1/2/38 50 ml. (74 mg. antibody N) 210 min.	None	Recovered
R.B.	I	+	1/18/37 50 ml. (65 mg. antibody N) undiluted, in divided doses	" †	
			1/19/37 50 ml. (65 mg. antibody N) as on 1/18	"	Empyema
			1/20/37 60 ml. (79 mg. antibody N) as on 1/18	"	Blood culture sterile 1/21/37; recovered
A.R.	III	0	1/21/38 100 ml. (102 mg. antibody N) 1000 ml. saline, 90 min.	Sl. respiratory discomfort. No rise in T.	Under observation 1/23/38
			1/22/38 37 ml. (38 mg. antibody N) 150 ml. saline, 30 min.	None	

*Infusion was given more quickly than in the next two cases.
†The antibody solution (Table I, No. 1) was not heated to 56° before use; horse serum was later given as skin test, with polysaccharide was negative and no more rabbit solution was available.