

### The Incidence of the Newer Types (Cooper) of Pneumococcus in Peiping.

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In a previous study on pneumococcal lobar pneumonia as occurring in Peiping<sup>1</sup> it was pointed out that the distribution of the various types of pneumococci according to the old classification compared closely with the experience in America. Recently, Cooper and her associates<sup>2</sup> by the use of specific agglutinative tests have separated those strains of pneumococcus hitherto designated as Group IV into 29 types and have produced specific antisera for a few of these types for therapeutic use. This finding has been substantiated by other workers and Group IV strains isolated from normal people as well as from pneumonic patients have been so classified.

Since January, 1935, we have been interested in the type-distribution of pneumococci isolated from routine cultures made of patients with a variety of diseases and have been able to classify a number of the Group IV strains. We are indebted to Miss Cooper who kindly supplied us with diagnostic sera.

Though it is impossible, on account of the small number tested, to make any generalization concerning the preponderance or scarcity of any one particular type, the distribution corresponds well with that found by other workers. In addition, a few more points of interest may be mentioned. Of the 22 cases of lobar pneumonia in adults 8 were due to Type V and 5 to Type IX. Eleven of these patients had bacteremia and 3 empyema; 8 died. Bronchopneumonia as a terminal complication in adult patients is found to be caused by a great variety of types. Pneumonias caused by these newer types is a very grave condition in children. The majority of our patients died. Of particular interest is the fact that 7 of the 22 cases in this series were caused by Type XIV, whose importance as a cause of pneumonia in children has been pointed out by Nemir,<sup>3</sup> Bullowa<sup>4</sup> and others. These authors also demonstrated the efficacy

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<sup>1</sup> Wu, C. J., and Chiu, T. Y., *Chinese M. J.*, 1933, **47**, 545.

<sup>2</sup> Cooper, G., Rosentstein, C., Walter, A., and Leizer, A., *J. Exp. Med.*, 1929, **49**, 461; *ibid.*, 1932, **55**, 531.

<sup>3</sup> Nemir, R. L., *J. Ped.*, 1934, **3**, 827.

<sup>4</sup> Bullowa, J. G., *J. Clin. Invest.*, 1935, **14**, 273.

TABLE I.  
Types (Cooper) of Pneumococcus as Encountered in Peiping.

Type	All cases	Lobar pneumonia	Broncho-pneumonia	Pneumonia, children
IV	4		1	
V	15	8	1	2
VI (a, b)	18			3
VII	2	1	1	
VIII	10		1	
IX	10	5	1	1
X	12	1	2	
XI	8		2	2
XII	4	1		
XIII	7			1
XIV	11	2		7
XV	5	1		2
XVI	4		2	
XVII	3			
XVIII	4			
XIX	9	2		
XX	5		1	1
XXI	2			1
XXII	3			
XXIII	14	1	2	1
XXIV	2		1	
XXV	1		1	
XXVII	1			1
XXVIII	1			
XXIX	2			
XXX	0			
XXXI	1			
XXXII	0			
Unclassified	4			
Total	162	22	16	22

of treatment of such cases with the specific Type XIV antiserum. The especial virulence of Type XIV for young children and babies was further borne out by the fact that 5 of our 7 cases developed purulent meningitis due to the same type, 6 had bacteremia and all cases ended fatally. Four strains with typical cultural characteristics and virulence for mice failed to be agglutinated by any of the sera used. These are now being further investigated.