particularly desirable in medicine, and is a test of memory rather than a test of desirable qualities. Actual experience with the type of written examination suggested shows that the plan is entirely feasible and that it fulfils the purposes for which it was designed.

PRIMARY AND POSTINFLUENZAL PNEUMONIA

A COMPARISON OF THE LABORATORY FINDINGS

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This report is based on the laboratory findings, tabulated in summarized form, of two series of pneumonia cases occurring in the base hospital at Camp Cody. One series consists of 178 cases of primary¹ pneumonia admitted between May 1 and Oct. 1, 1918.

TABLE 1.—MORBIDITY AND MORTALITY INCIDENCE

Primary Pneumonia	Postinfluenzal Pneumonia
Period of time: May 1 to Oct. 1, 1918 (5 months).	Oct. 1 to Dec. 1, 1918 (2 months).
Number of cases: 178 cases, of which 7 were post-operative, 2 posttraumatic.	624 cases developing out of 3,265 influenzas.
Clinical diagnosis: Lobar pneumonia, 123 cases; bronchopneumonia, 55 cases.	624 cases, all diagnosed bronchopneumonia, postinfluenzal.
Mortality: 20 deaths; 11.23%.	240 deaths; 38.4%.
Approximate number of troops in camp: May 1 to June 1, 1918, 21,000. June 1 to July 1, 1918, 27,000. July 1 to Sept. 1, 1918, 32,000. Sept. 1 to Oct. 1, 1918, 5,000.	Oct. 1 to Nov. 1, 1918, 4,500. Nov. 1 to Dec. 1, 1918, 10,000.

TABLE 2.—COMPLICATIONS IN WHICH BACTERIOLOGIC INVESTIGATIONS WERE MADE

Primary Pneumonia	Postinfluenzal Pneumonia
Empyema: Incidence: 12 empyemas out of 178 pneumonias6.8% Bacteriology of 12 exudates.	Incidence: 65 empyemas out of 624 pneumonias10.4% Bacteriology of 60 exudates.
Cases Pr. Ct.	Cases Pr. Ct.
Pneumococcus 2* 16.6*	Pneumococcus 25* 41.1*
Type I 2 ...	Type II atypical.... 12 ...
Streptococcus 10* 83.3*	Type III 11 ...
Hemolytic 7 ...	Type IV 11 ...
Nonhemolytic 3 ...	Streptococcus 23* 38.3*
	Hemolytic 4 ...
	Nonhemolytic 19 ...
	Mixed 12* 20.0*
	Strepto. hem. and Pneum. III..... 3 ...
	Strepto. nonhem. and Pneum. 7 ...
	Strepto. hem. and Pneum. IV..... 2 ...
Meningitis: Incidence: 1 case out of 178 pneumonias0.6% Bacteriology	Incidence: 7 cases out of 624 pneumonias1.1% Bacteriology
Cases Pr. Ct.	Cases Pr. Ct.
Pneumococcus:	Pneumococcus 6* 85.7*
Type I 1 100.00	Type II atypical.... 3 ...
	Type III 1 ...
	Type IV 2 ...
	Streptococcus:
	Hemolytic 1 14.3
* Subtotals.	

The other consists of 624 cases of postinfluenzal pneumonia occurring between Oct. 1 and Dec. 1, 1918.

In order to present the comparison more clearly, the summarized findings of the two series of cases will be placed side by side. On the left hand will appear data pertaining to the primary pneumonias, while on the right hand, and directly opposite, will appear data of the same character applying to the postinfluenzal

pneumonias. The figures given in the accompanying tables are derived almost entirely from daily laboratory records. No effort is made to coordinate the laboratory and the clinical features. In fact, the primary

TABLE 3.—BLOOD EXAMINATIONS

Primary Pneumonia	Postinfluenzal Pneumonia
Blood cultures: Number of cultures164	Number of cultures248
Organisms recovered in 34 cases20.7%	Organisms recovered in 4 cases1.6%
Cases Pr. Ct.	Cases Pr. Ct.
Pneumococcus 30* 89.0*	Pneumococcus 3* 1.2*
Type I 19 ...	Type I 1 ...
Type II 2 ...	Type II 1 ...
Type II atypical.... 1 ...	Type II atypical.... 1 ...
Type III 1 ...	
Type IV 4 ...	
Types I and II 1 ...	
Types I and II atypical 1 ...	
Types II and III..... 1 ...	
Streptococcus 4* 11.0*	Streptococcus 1* 0.4*
Hemolytic 2 ...	Hemolytic 1 ...
Nonhemolytic 2 ...	
Leukocyte counts: Average leukocyte count in 176 cases21,830	Average leukocyte count in 350 cases9,480
Cases Pr. Ct.	Cases Pr. Ct.
8,000 or under..... 6 3.4	8,000 or under..... 203 58.0
8,000 to 12,000..... 12 6.8	8,000 to 12,000..... 53 15.1
12,000 to 25,000..... 90 51.1	12,000 to 25,000..... 82 23.5
Over 25,000 68 38.7	Over 25,000 12 3.4
* Subtotals.	

TABLE 4.—SPUTUM EXAMINATIONS

Primary Pneumonia	Postinfluenzal Pneumonia
Sputums: Number of sputum examinations, 204 (in total of 156 cases).	Number of sputum examinations, 365 (in total of 348 cases).
Cases Pr. Ct.	Cases Pr. Ct.
Pneumococcus 104* 66.7*	Pneumococcus 216* 62.0*
Type I 43 27.6	Type I 9 2.6
Type II 21 13.5	Type II 7 2.0
Type II atypical.... 10 6.4	Type II atypical.... 24 6.9
Type III 8 5.1	Type III 14 4.0
Type IV 22 14.1	Type IV 162 46.5
Streptococcus 27* 17.2*	Streptococcus 91* 26.0*
Hemolytic 22 14.1	Hemolytic 37 10.6
Nonhemolytic 5 3.1	Nonhemolytic 54 15.4
Mixed 25* 16.1*	Reports unsatisfactory for classification..... 41* 11.8*
Type I and Strept. hem. 7 4.5	
Type II and Strept. hem. 4 2.5	
Type III and Strept. hem. 1 0.6	
Type IV and Strept. hem. 13 8.5	
* Subtotals.	

object of this report is to present a brief, concise comparison of the results of certain common laboratory investigations in two series of cases.

It may be stated, by way of explanation, that the laboratory personnel and the technical methods employed during the seven months in which these studies were in progress remained practically the same throughout. Whatever technical errors have been made are proportionately common in both series. For the sake of efficiency in the laboratory, and of conformity in results, the examinations were carried out in a routine manner. Blank outlines indicating the data desirable for each kind of specimen were filled out as the examination of the specimen progressed.

The actual technic of the laboratory investigations has become too well known and standardized, I believe, to require a detailed description here. In general, the sputum "typings" were carried out according to the methods of Cole, Dochez and Avery. Avery's pneumococcus culture medium and his mouse inoculations were both used in the typing of practically all sputums and exudates. By means of blood agar pour plates, streptococci were differentiated into hemolytic and nonhemolytic groups. The blood cultures were made by inoculating 180 c.c. of bouillon with about 15 c.c. of blood, and were examined at twenty-four hour intervals for three or four days.

1. In this report the word "primary" signifies ordinary clinical lobar pneumonia or bronchopneumonia.

COMMENT

It will be seen in Table 1 that approximately three and one-half times as many cases of pneumonia developed during the two months of the influenza epidemic as occurred in the camp during the five preceding months, although the number of troops averaged less than one third during the epidemic. The mortality rate in the postinfluenzal pneumonias was nearly three and one-half times that of the primary pneumonias.

Of the complications shown in Table 2, the incidence of empyema and meningitis was approximately twice as great in the influenzal pneumonia series. The bacteriology of the exudates differed considerably in the two series, as shown in the table.

Positive blood cultures were obtained in 20.7 per cent. of the primary pneumonias, but in only 1.6 per cent. of the influenzal pneumonias; a proportion of 13:1. The average leukocyte count in the latter series was considerably less than one half that of the former. Ten and two-tenths per cent. of the primary pneumonias gave a leukocyte count of 12,000 or under, whereas 73.1 per cent. were under 12,000 in the influenzal series.

In Table 4 there is shown a marked difference in the results of sputum "typings." Types I and II pneumococci occurred in 41.1 per cent. of the sputums from cases of primary pneumonia, whereas the same types were found in only 4.6 per cent. of the postinfluenzal cases. Type II atypical and Type III were of about equal occurrence. Group IV was found in 14.1 per cent. of the primary pneumonias and 46.5 per cent. of the postinfluenzal pneumonias. The hemolytic group of streptococci was encountered more frequently in the primary cases; the nonhemolytic group in the other series.

NOMENCLATURE OF HUMAN ISO-
HEMAGGLUTINATION GROUPS

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In the course of a series of cross agglutinations in order to secure known Group II and Group III serum to keep on hand for grouping individuals for blood transfusions, it became apparent that two systems of designating the four different isohemagglutination groups of men are in use. Few authors¹ refer to the two systems, and the author of the older one is seldom mentioned. While the matter is of little practical importance, it may not be without interest to call attention to the two systems of naming the groups.

The older classification since the existence of four groups has been recognized is that of Jansky.² Among others who follow it are Ottenberg,³ Zinsser,⁴ Meleney, Stearns, Fortune and Ferry,⁵ and Edition 1 of the "Laboratory Methods of the United States Army."⁶ Here the most common group, the one whose serum is the most agglutinative and whose cells are never

agglutinated, is called I. The least common group, the one whose serum never agglutinates and whose corpuscles are always agglutinated except by its own serum, is called IV. Groups II and III embrace those persons whose serum agglutinates each other's cells and the cells of Group IV, but not the cells of Group I, and whose cells are agglutinated by each other's serum and by the serum of Group I and not by that of Group IV. The most commonly encountered of the two reciprocal Groups II and III is designated by Jansky and by every other writer as Group II, and the one less frequently encountered as Group III. Jansky's Groups I, II and III correspond to Groups I, II and III of Hektoen⁷ and other early workers when only three groups were recognized.

The other system of numbering the groups is that of Moss.⁸ Among others who follow it are Sanford,⁹ Stitt,¹ Drinker and Brittingham,¹⁰ and Edition 2 of the "Laboratory Methods of the United States Army." Here the common and strong group is designated as IV, the rare and weak group as I. Groups II and III have the same significance with Moss as with Jansky.

The arguments for following the Jansky classification are its priority, and its rational method of numbering the groups inversely according to their frequency of occurrence. The argument for following the Moss classification is its apparently wider adoption.

Explanatory or partially explanatory words might be used with propriety for designating the groups, such as sthenic and antisthenic for Jansky's Groups I and IV, and parasthenic and antiparasthenic for Groups II and III.

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Vaccine Treatment of Otitis Media.—In the *Japan Medical World*, Jan. 26, 1919, p. 267, T. Tanaka reports good results from autogenous vaccines made from secretions from the ear or even from the nose if the ear is not discharging. The treatment is effectual in the acute phase or as the otitis is just passing into the chronic stage. The vaccine therapy is peculiarly effectual in otitis media in infants, and the author emphasizes the importance of curing the disease in this early stage as there is no doubt that otitis media in adults is often the result of infectious processes in childhood. The severe pain of otitis media in infants, it is stated, abates and the pathologic process is arrested under the vaccine treatment. The author says that the importance of this is evident as we realize that the staphylococcus, the germ usually involved after the process has persisted for any length of time, is particularly destructive of bone tissue. Ordinary symptomatic treatment does not reach the remoter regions of the lesions, and the destructive process may continue in the depths without any clinical manifestations, while the effect of the vaccine is felt at all depths. The cure is complete under five or six injections, namely, in ten or twelve days; the discharge usually ceases in four or six days. He uses 0.3 mg. of bacteria per cubic centimeter of the physiologic saline, heating this suspension to 30 C. for thirty minutes. After heating, phenol is added to make a 0.5 per cent. solution. In acute cases the intervals are forty-eight hours; in the chronic cases, two or three days. The initial injection dose is 0.1 or 0.15 c.c. for infants and 0.25 for adults, increasing the doses until 1 c.c. is reached, and then recommencing with the initial dose. Tanaka reports an apparently complete cure in 95 per cent. of the acute cases in infants and in 75 per cent. of the chronic cases.

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