TABLE I.
Analysis of Results on Basis of Blood Groups of 78 Individuals Studied for Skin Sensitivity to Type I Pneumococcus Polysaccharide.

Blood Group Serum agglutinins present	O a and b	A b	B a	AB o	No. of cases	% of total cases
Positive skin tests to both acetyl and deacetylated polysaccharide	19	25	8	4	56	71.8
Positive skin tests to acetyl polysaccharide only	1	1	0	0	2	2.6
Negative skin tests to both acetyl and deacetylated polysaccharide	6	7	4	3	20	25.6
Distribution of cases among blood groups	26	33	12	7		
Cases having history of pneumonia at some time in the past	4	1	1	0	6	7.7

It is of considerable interest in regard to the mechanism of the positive reactions in question to note that out of repeated attempts to induce passive transfer of skin sensitivity to the Type I Pneumococcus carbohydrate with the serum from 40 of the positively reacting cases, by the Prausnitz-Küstner technique,[6] only 2 sera were active. In both of these instances the individuals from whom the serum was obtained gave a history of having had pneumonia.

In conclusion it may be stated that in a series of 78 normal individuals tested no correlation could be established between the skin reactivity of these individuals to Type I Pneumococcus specific polysaccharide and their blood groups. It was further shown that sensitivity to the Type I polysaccharide occurring in individuals without previous known pneumococcus infection, could not be transferred passively to the skin of non-sensitive individuals.

8329 C

Presence of Antibody in Bile.*

JULIAN A. STERLING. (Introduced by I. S. Ravdin.)

From the Laboratory of Surgical Research, University of Pennsylvania.

In the course of an investigation of various factors involved in gallstone formation, studies have been carried out on the presence of antibody in hepatic and gall-bladder bile, when demonstrable amounts of antibody were present in the serum.

[6] Prausnitz, C., and Küstner, H., *Centralbl. f. Bakteriol.* (Orig.), 1921, **86**, 160.

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Mongrel dogs from our animal house stock were used in these experiments. The procedure consisted, first in determining the agglutinin titer in the serum to staphylococcus *(S. aureus hemolyticus)*, streptococcus *(S. fecalis)*, *B. coli* and *B. typhosum* (flagellate and aflagellate strains). The dogs were then immunized with a polyvalent vaccine, containing the above organisms to a concentration of about three billion per cc. Injection of the vaccine in the course of the immunization was as follows: (Table I.)

TABLE I.

Day	cc. Injected	Route
1	1	Subcutaneously
2	2	"
3	2	"
4	2	Intraperitoneally
10	3	"
11	5	"
12	7	"
13	9	"

Twenty-five days after the beginning of immunization, the dogs were operated on and a sample of the gall-bladder bile removed, after which cholecystectomy was performed. The common duct was doubly intubated after the method of Elman and McMaster[1] so that specimens of sterile hepatic bile could be recovered. At the same time the antibody titer of the serum was determined.

Numerous studies conducted in this laboratory on the gall-bladder bile and hepatic bile of normal dogs, which are uninfected and show no previous evidence of biliary tract damage, have shown that no significant agglutinin can be demonstrated (a table of normal titers has been omitted, therefore, to conserve space).

Dogs which have been immunized with the polyvalent vaccine prior to common duct intubation have agglutinin present in the serum, in the gall-bladder bile, and in the hepatic bile (Table II).

The agglutinins were present in the highest concentration in the serum. In the hepatic bile, they were of low titer, but the greater concentration found in the gall-bladder bile indicates that antibody is concentrated in that viscus. The ratio of antibody in the hepatic bile to that found in the gall bladder varied from 1:2 to 1:16. The latter figure is interesting in that studies in this laboratory[2] have shown that certain biliary constituents may be found to be 16 times as concentrated in the gall-bladder bile as in the hepatic bile.

[1] Elman, R., and McMaster, P. D., *J. Exp. Med.*, 1925, **41**, 503.

[2] Ravdin, I. S., Riegel, C., and Johnston, C. G., *J. Exp. Med.*, 1932, **56**, 5.

TABLE II.
Agglutinin Titer in Serum, Hepatic Bile, and Gall-Bladder Bile to Bacterial Antigens in Dogs.

Dog No.		*Staphylococcus*	*Streptococcus*	*B. coli*	*B. typhosum* flagellate	*B. typhosum* aflagellate
19	Serum	1:800	1:1600	1:800	1:400	1:1600
	Gall-bladder bile	1:120	1:120	1:240	1:240	1:120
	Hepatic bile	1:60	1:60	1:120	1:120	1:60
20	Serum	1:400	1:800	1:3200	1:1600	1:3200
	Gall-bladder bile	1:120	1:120	1:240	1:240	1:60
	Hepatic bile	1:60	1:30	1:60	1:120	1:30
42	Serum	1:400	1:400	1:800	1:800	1:1600
	Gall-bladder bile	1:160	1:80	1:160	1:80	1:160
	Hepatic bile	1:20	1:10	1:10	1:40	1:10

Conclusions. Immunized dogs which have developed serum agglutinins to certain strains of the staphylococcus, streptococcus, colon and typhoid bacteria, have those agglutinins present in the hepatic and the gall-bladder bile. The data indicate that antibody is concentrated in the gall bladder.

8330 P

Lysis of Tubercle Bacilli in Vitro.

WILLIAM STEENKEN, JR. (Introduced by L. U. Gardner.)
From the Research and Clinical Laboratory, Trudeau Sanatorium, Trudeau.

The results of studies on the dissociation of the H_{37} strain of human tubercle bacilli have been reported.[1] The variants found were designated "R" indicating resistant to environment and "S" indicating sensitive to environment. This communication records an interesting lytic phenomenon observed during the study of the effect of ageing H_{37} "R" and "S" variants on gentian violet glycerol egg and plain glycerol egg media of different pH. For clarity it seems advisable to discontinue this usage of the symbols "R" and "S" and to employ them in the usual sense as indicative of a rough or smooth colony structure. To indicate virulence or avirulence the letters (v) or (a) are appended thus "Rv" and "Ra". Since a smooth variant of H_{37} which manifests a typical morphology and virulence has not been obtained this terminology has been adopted to cover

[1] Steenken, W., Jr., Oatway, W. H., Jr., and Petroff, S. A., *J. Exp. Med.*, 1934, **60**, 515