As a control, another sheep (R) had been given parallel injections of a crude emulsion of the central nervous system of normal monkeys. It also was given 2 similar injections of alumina-gel which had been treated with nervous tissue from normal monkeys in the same manner that the virus-alumina-gel was prepared. Table I gives the results of neutralization tests made with serum from different bleedings of both sheep.

Attention should be called to the fact that we have not found an end-point in the serum titre of the sheep (L) injected with virus. In every instance neutralization was effected by the highest dilution of serum used, which in one instance was 1:500. We were gratified to find that the serum possessed good neutralizing power 5 months after the last immunizing injection. Irregular results were obtained with the serum of the sheep (R) that received normal nervous tissue. This is consistent with the reports of several workers that normal sheep serum may in some cases neutralize the virus, and that this property may fluctuate in individual sheep.[2]

7820 P

Mechanism of Death in Bile Peritonitis.

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The question of the mechanism of death in so-called "bile peritonitis" due to the leakage of moderate or large amounts of bile into the peritoneal cavity has puzzled investigators for some time. The resultant peritonitis has been attributed to a toxic action or the action of anaerobic organisms. Mason[1] and Andrews[2] noted that a large amount of exudate was formed in the peritoneal cavity of animals dying from liver autolysis and experimentally produced bile peritonitis. Blalock,[3] Underhill,[4] Harkins,[5] and others have shown that

[1] Mason, E. C., and Davidson, E. C., *J. Lab. and Clin. Med.*, 1925, **10**, 622.

[2] Andrews, E., Rewbridge, A. G., and Hrdina, Leo, *Surg. Gynec. and Obst.*, 1931, **53**, 176.

[3] Beard, J. W., and Blalock, A., *Arch. Surg.*, 1931, **22**, 617.

[4] Underhill, F. P., Kapsinow, R., and Fisk, M. E., *Am. J. Physiol.*, 1930, **95**, 302.

[5] Harkins, H. N., PROC. SOC. EXP. BIOL. AND MED., 1934, **31**, 994; and articles on freezing, in press.

TABLE I.

Blood concentration changes, blood pressure fall, chemical analysis of blood plasma and peritoneal fluid, and amount of peritoneal exudate found at necropsy in bile peritonitis produced by 3 different methods.

No.	Procedure	Hours before death	Wt. kg.	Time	Hb.	Hemat.	Blood Pressure mm. Hg.	NaCl mg./100 cc.		Total Protein gm./100 cc.		Peritoneal Exudate
								Blood	Fluid	Blood	Fluid	% body wt.
1	7.5 gm. bile salt/kg.	5	14.0	Start	93	52	150	656	615	4.55	3.87	2.5
				End	162	71	26					
2	" " " " "	6	8.5	Start	62	45	170	649	516	2.86	4.31	2.1
				End	135	66	46					
3	2.5 " " " "	22*	13.7	Start	107	47	182	623	645	3.92	4.15	1.6
				End	140	64	114					
4	" " " " "	5½*	15.5	Start	93	44	144	606	672	12.46	4.17	2.0
				End	138	71	82					
5	2 cc. whole bile/kg.	5	7.5	Start	97	44	156	—	625	—	4.00	1.1
				End	136	64	132					
6	" " " "	19½*	14.0	Start	73	37	190	664	683	4.63	3.65	1.5
				End	102	53	126					
7	" " " "	6	9.8	Start	92	44	130	647	—	3.57	—	1.2
				End	112	50	54					
8	" " " "	20*	12.2	Start	86	41	158	665	613	4.26	5.47	0.5
				End	110	51	132					
9	Common duct ligation and gall bladder defundation	30	9.0	Start	82	35	—	—	571	7.65	4.96	2.7
				End	—	—	—					
10	"	14	10.0	Start	83	40	144†	563	630	7.79	5.45	4.4
				End	110	54	64					
11	Control	25*	24.5	Start	86	48	130	636	—	6.56	—	—
				End	125	55	110					
12	"	24*	7.8	Start	103	53	140	669	—	5.42	—	—
				End	113	54	116					

* Denotes that the animal was killed by bleeding. All other animals died spontaneously.

† Blood pressure reading taken after ligation.

in burns, freezing, and intestinal trauma, a large factor in the production of the resultant shock and death is the loss of a large amount of plasma-like fluid from the blood stream. To test the hypothesis that the loss of a similar plasma-like fluid into the peritoneal cavity might be a large factor in the production of death in bile peritonitis, the present work was undertaken.

Bile peritonitis was produced by 3 methods: The intraperitoneal injection of sterile bile or bile salts, and ligation of the common duct followed by defundation of the gall bladder. In most instances the dogs used in these experiments died from 5 to 30 hours following the procedure. The results are shown in Table I. There was marked concentration of the blood with a greatly increased hemoglobin percentage and hematocrit reading and a marked fall in carotid blood pressure. Necropsy revealed an enormous collection of peritoneal fluid, amounting in several instances to over 3% of the body weight. This fluid clotted spontaneously and chemical analysis revealed that it conformed closely in amount of total protein, nonprotein nitrogen, sugar, and chloride content to the blood plasma of the animal in question. Cultures of the fluid revealed no constantly present organism.

Conclusion. The amount of plasma-like peritoneal exudate in experimental bile peritonitis indicates that the loss of this fluid from the blood stream is an important factor in the production of shock and death in this condition.

7821 P

Comparative Study of Respiratory Portion of the Lung.*

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All authors agree that the respiratory portions of lungs of Amphibia and Reptilia are lined by continuous, flattened, nucleated, epithelial membranes. Some investigators maintain that there is a continuous, flattened nucleated and non-nucleated epithelial membrane lining the respiratory portions of mammalian lungs, while others deny the presence of an epithelium. Some believe that the small, nucleated cells found in the meshes of the capillaries in the

* This research was aided by a grant to the University of Chicago by the Rockefeller Foundation.