

ordinary Maitland cultures in the 30 cc. flasks as recommended by Nigg and Landsteiner.²

By using this method we are obtaining with reasonable regularity, considerable yields of European Rickettsiae in these large flasks. We have had positive results not only when the culture fluid consisted of guinea pig serum, one part to 3 or 4 of Tyrode's solution, but also when human serum or horse serum was mixed before filtration in proportions of 1 to 4 with the Tyrode solution. Indeed we seem to be getting our best Rickettsiae yields in guinea pig tissue with the horse serum Tyrode solution preparations. The best time for "harvesting" is on the 8th or 9th day of incubation at 37°C. As the cultures are going at present it should be possible to obtain 5 or more doses of vaccine from each of these flasks. And in view of observations that such tissue culture vaccines, treated with 0.1% formalin produce active immunization of guinea pigs against the European strain of typhus virus, the method offers practical possibilities for the mass production of such vaccines for trial on man.

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Serum Phosphatase in Cats with Total Bile Stasis.*

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The observation by Roberts of an increase in serum phosphatase activity in patients with jaundice has been confirmed by a number of investigators. Similar results have been obtained in dogs with experimentally produced obstructive and nonobstructive hepatic jaundice^{1, 2, 3} and elevated values have been reported in portal cirrhosis.^{4, 5} In view of the uniformity of the previously reported data, particularly in obstructive jaundice, and the importance of this

² Nigg, C., and Landsteiner, K., *J. Exp. Med.*, 1932, **55**, 563.

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¹ Bodansky, A., and Jaffe, H. L., *Proc. Soc. Exp. Biol. and Med.*, 1934, **31**, 1179.

² Hartman, F. W., and Schelling, V., *Arch. Path.*, 1934, **18**, 594.

³ Armstrong, A. R., and King, E. J., *Canad. Med. Assn. J.*, 1934, **31**, 14.

⁴ Greene, C. H., Shattuck, H. F., and Kaplowitz, L., *J. Clin. Invest.*, 1934, **13**, 1079.

⁵ Herbert, F. K., *Brit. J. Exp. Path.*, 1935, **16**, 365.

uniformity in connection with any attempt to explain the pathogenesis of this phenomenon and its significance, the results of our observations upon cats with total bile stasis are of interest.

Determinations of serum bilirubin concentration and serum phosphatase activity were made in 8 normal cats and 30 adult cats at various stages of total bile stasis produced by ligation of the com-

TABLE I.
Serum Bilirubin Concentration and Serum Phosphatase Activity in 8 Normal Cats and 30 Cats at Different Periods of Total Bile Stasis.

Cat	Stasis, days	Serum bilirubin, mg. per 100 cc.	Serum phosphatase units
1-8	0	0.0	0.95-3.84
9	2	0.23	3.36
	4	0.41	2.39
	16	8.96	11.03
10	4	0.2	3.09
11	4	0.0	3.55
12	6	0.68	2.39
	13	4.8	3.76
	20	6.4	3.4
	29	2.52	5.92
13	6	3.64	3.21
	10	12.0	2.4
	21	24.0	5.8
14	7	2.32	3.72
15	7	0.0	3.8
16	8	2.04	4.6
	14	3.16	3.2
17	9	4.1	1.8
18	9	2.3	2.9
19	10	2.68	2.48
20	10	0.4	3.6
21	11	1.2	2.7
22	12	1.1	1.9
23	12	1.3	2.8
	20	3.2	3.4
24	13	20.2	1.07
25	14	5.2	1.25
	18	0.48	0.97
26	14	11.6	3.4
	21	19.2	2.7
27	15	1.61	3.1
28	15	0.93	3.78
29	16	0.32	3.82
30	16	0.41	1.84
	20	0.25	2.68
31	17	1.3	3.4
	19	1.18	2.93
32	17	0.64	2.04
33	18	0.32	1.96
	20	0.41	1.92
34	18	0.68	1.01
35	19	6.8	2.61
36	19	4.1	3.6
37	19	1.9	3.14
	21	1.8	3.81
38	20	0.8	2.24

mon bile duct. No case is included in which, at autopsy, there was evidence of the presence of any complication or any indication that stasis was not complete. The animals were maintained upon a diet of fresh raw scrap meat and milk. Serum bilirubin was determined by the method of van den Bergh and serum phosphatase by the method of Bodansky.⁶

The findings are presented in Table I. The control values ranged from 0.95 to 3.84 units of phosphatase. Of 45 determinations made upon 30 cats with total stasis, 41 during stasis of 2-21 days' duration were within the limits of the control values. Higher values were obtained in only 4 instances, as follows: 11.03, 5.92, 5.8 and 4.6 units, with stasis of 16, 29, 21 and 8 days' duration, respectively. There was no consistent relationship between serum phosphatase activity and either the duration of stasis or the degree of bilirubinemia.

These observations add another point of difference to those previously reported between the cat and other species in regard to the effects of total bile stasis upon the organism.⁷ The fact that a species difference does appear to exist in this respect indicates that care must be exercised in attempting to explain the mechanism of increase of serum phosphatase activity in obstructive jaundice in man and in dogs.

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Parathyroid Function in Hyperthyroidism.

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That abnormalities of function of other glands as well as of the thyroid gland occur in patients with hyperthyroidism is generally recognized. Conclusive evidence on the functional status of the parathyroid glands in hyperthyroidism, however, has not been reported. For this reason studies of parathyroid function by means of the Hamilton and Highman¹ test in patients with hyperthyroidism have been undertaken, and our findings to date are here presented.

⁶ Bodansky, A., *J. Biol. Chem.*, 1933, **101**, 93.

⁷ Cantarow, A., and Stewart, H. L., *Am. J. Path.*, 1935, **11**, 561.

¹ Hamilton, B., and Highman, W. J., Jr., *J. Clin. Invest.*, 1936, **15**, 99.