of water added to the blood is not sufficient to cause perceptible laking, far more of the water enters the corpuscles than would be expected from purely osmotic considerations. In some of our experiments all of the water added to the blood had entered the corpuscles. An example of this is given below.

Ox defibrinated blood. Original serum had 91.5 per cent water. Dilutions made by taking 14, 13, 12 and 11 cc. of this serum and adding water to make up to 15 cc. 10 cc. of corpuscles mixed with 10 cc. of the sera. After standing 2½ hours and centrifuging, the percentages of water in the sera were: 90.9, 91.2, 91.5 and 91.2 respectively. By the hematokrit the percentage of corpuscles was 44.1 in the original, 48.4, 49.4, 53.5 and 56.4 in the bloods with diluted serum.

The average water content of the serum increased only from 90.9 to 91.5 in eight experiments with different samples of ox blood when 25 cc. of water was added to 100 cc. of the blood. If one takes the original blood as 44 per cent corpuscles and 56 per cent serum and the added water distribution uniformly between the two, one would expect about 92.7 per cent water in the serum instead of the 91.5 per cent found. These experiments were carried out at room temperature.

These results show that water may penetrate the cells beyond the amount expected from a purely osmotic process and must be due to some hydrophilic property of the colloid. These experiments are being continued, using different strengths of salt solution.

274 (2506)

Production of goiter in rats by restricted iodin feeding.

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Two litters of white rats were divided, half of each being placed in a separate cage. They were all fed the following diet: 53 parts oats, 25 parts patent flour, 20 parts linseed meal, one

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part calcium phosphate and one part sodium chloride. In one cage the rats were given distilled water to drink, and the other, water containing 0.1 mg. of iodine per liter. Two rats on each diet were killed after 4 weeks and the weighing of the thyroid completed within 7 minutes after death. This process was repeated every 2 weeks until all had been killed. The following table shows the thyroids to be doubled in size in rats not receiving iodine:

	Iodine-rich.			Iodine-poor.	
Rat	Body wt.	Thyroid	Rat	Body wt.	Thyroid
1.	90 gm.	9.9 mg.	1.	90 gm.	15.7 mg.
2.	99 gm.	10.0 mg.	2.	97 gm.	23.3 mg.
3.	114 gm.	9.9 mg.	3.	127 gm.	33.3 mg.
4.	135 gm.	14.2 mg.	4.	133 gm.	27.6 mg.
5.	137 gm.	12.6 mg.	5.	137 gm.	25.5 mg.
6.	140 gm.	15.3 mg.	6.	140 gm.	30.1 mg.

275 (2507)

The reaction of tubercular serums to phenols.

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In continuing the investigations on the precipitin reaction in tuberculosis begun by Larson, Montank and Nelson,[1] it was found that certain non-specific substances would serve as "antigens".

If a serum from a tuberculous patient is covered with dilute solution of thymol, toluene, phenol or tricresol a cloud is formed at the interface of the two fluids. The reaction occurred with such regularity in the tests on tuberculous serum that it was considered worthy of further investigation. Tricresol was selected as the reagent to be used and made up to a concentration of 0.2 of one per cent in physiologic saline solution. The serums to be tested were covered with the reagent and incubated at 37° C. for a period up to 2 hours. The positive reactions often appeared in the first few minutes. In the far advanced cases the reaction developed more slowly, and in some cases, a week or more before death ensued, a negative result was obtained. Normal guinea

* Introduced by W. P. Larson.

[1] Larson, W. P., Montauk, I. A., and Nelson, E., PROC. SOC. EXP. BIOL. AND MED., 1923, xx, 350.