6. Extremely high vascular pressure causing acute cardiac dilatation resulting in pulmonary edema, produced in a mammal by large doses of adrenalin.
7. Pneumothorax.
   Hydro-pneumothorax.
   Pneumo-peritoneum.
   } Their physical signs and their effects upon blood pressure, heart action and respiration.
8. Pneumo-peritoneum.
   Hydro-peritoneum.
   Gastro-intestinal distension with air.
   } Studied in detail, as indicated for No. 7.
9. Heat, cold and hemorrhage in their relation to respiration, circulation and the etiology and treatment of "shock."
10. Intracranial pressure and the results of its increase upon respiration and general blood pressure.
11. Acute bronchitis, produced by the administration of chlorine gas as an irritant in the inspired air.
12. Heat, cold and counter-irritation in their relation to temperature and circulation in the superficial and deeper portions of the body.
13. Renal secretion and general blood-pressure as affected by
    Amyl nitrite,
    Adrenalin,
    Heat,
    Cold,
    Vagus stimulation.
14. Capillary circulation as affected by pressure locally and vasoconstriction generally.
15. Mitral stenosis.
16. Secretion of bile as affected by changes in blood pressure and the use of cholagogues.

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The influence of alcohol on the composition of urine.

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About twenty years ago Schumoff and Simanowski showed that oxidation in the body is markedly diminished after the

administration of alcohol. They estimated oxidation in the body by the amount of phenol found in the urine after giving benzol. By this method they obtained results which showed that the oxidative processes in the body decreased 60–75 per cent. as a result of administering alcohol. Their findings seemed to be confirmed later by Presnyakoff who studied this problem in a different manner. He determined the amount of neutral sulphur before, during and after the administration of alcohol and concluded that the amount of unoxidized sulphur decreases during the alcohol period. As his data, hardly justify such a conclusion, we decided to reinvestigate the subject, with special reference to the amount of unoxidized sulphur as affected by alcohol. In the course of the research, however, it seemed to us desirable to study exactly also the effects of alcohol on the other urinary constituents. We carried out our experiments on a healthy dog kept in one of the improved metabolism cages devised and described by Professor Gies.

The diet consisted of meat, cracker meal, lard, and bone ash, given with definite amounts of water. Each experiment was begun after the dog reached a constant weight. During the control period 50 c.c. of water were given daily by mouth through a stomach tube for 6 days. During the next 6 days 50 c.c. of alcohol were administered in the same way. This was followed by another alcohol period of 7 days, when the same daily volume of 70 per cent. alcohol was given. The alcohol was then discontinued and water was given again for 10 days in the same way as in the control period. Samples of forty-eight hour urine were taken for analysis. The results of our observations on one dog show that the neutral sulphur of the urine increased 12.68 per cent., when 50 per cent. alcohol was given. When the same amount of 70 per cent. alcohol was given the neutral sulphur increased 52.88 per cent. as compared with that of the control period. The amounts of neutral sulphur were as follows : Control period — 27.2 per cent. First alcohol period, when 50 c.c. of alcohol were given, the amount of neutral sulphur was 40.5 per cent. of the total sulphur. During the third period, when 70 per cent. of alcohol was given, the amount of neutral sulphur constituted nearly one half of the total sulphur — 47 per cent. The total sulphur of the

urine showed marked diminution during the first alcohol period, when the average daily output was 255.3 mgs. as against 336.8 mgs. in the control period, which is a diminution of 24.2 per cent. When the same volume of 70 per cent. alcohol was administered, however, the difference was less marked, the daily average being 297.8 mgs. of sulphur or 11.4 per cent. less than in the control period.

The inorganic and ethereal sulphates of the urines were likewise determined. The former showed a striking diminution during the alcohol periods. When 50 per cent. alcohol was given the daily average output of inorganic sulphates was 133.4 mgs., while the amount eliminated per day during the control period was 208.1 mgs. — a diminution of 36 per cent. With 70 per cent. alcohol the average amount per day was 69.2 per cent. During the after period, when alcohol was discontinued, the inorganic sulphates rapidly returned to the normal. The amount found in the combined urines of the 3d and 4th days was about the same as in the control period. In the subsequent days the sulphates steadily increased in amount until on the 9th and 10th days the output was even slightly greater than in the control period. The ethereal sulphates in the urine of this dog presented very interesting results. There was considerable fluctuation in the amounts found in the control period. The amount excreted during the first 2 days was 69.1 mgs.; 3d and 4th days — 48.6 mgs.; 5th and 6th days — 104.4 mgs. During the first alcohol period, the variation was much less; the quantity eliminated was also markedly diminished. The diminution continued all through the second alcohol period, as well as in the after period when alcohol was discontinued. The ratio of the simple sulphates to the ethereal sulphates rose in the alcohol period but was highest in the after period.

The elimination of phosphoric acid likewise showed considerable diminution in the alcohol periods. While the average amount of P_2O_5 excreted during the control period was 801 mgs. per day, in the first alcohol period it was 552 mgs. — a diminution of 40 per cent., which practically continued when 70 per cent. alcohol was given. In the after period a decided tendency to return to the normal was noticed but at the end of the 10 days, the amount excreted was 13–15 per cent. below that of the control period.

The urinary nitrogen likewise showed a considerable diminution when 50 per cent. alcohol was administered. The total nitrogen decreased 12 per cent. When the quantity of alcohol was increased, however, the nitrogen failed to undergo a corresponding diminution — our analysis showed a decrease of only about 4.4 per cent. as compared with the control period. The average daily output of nitrogen remained practically the same during the 10 days of the after period. We have also made determinations of the urinary chlorides. The influence of alcohol was plainly evident and was similar to that on the other urinary constituents. The chlorides decreased 17–22 per cent. but they practically returned to normal in the after period which was continued for 10 days.

As was mentioned before, these particular results were obtained in the analysis of the urine of one dog. Whether alcohol behaves the same in other individuals remains to be seen. There are some indications, however, that not all dogs react alike to alcohol.

Table showing the influence of alcohol on the composition of dog urine. Average daily output in grams.

		Alcohol period.		
	Fore period.	50 per cent.	70 per cent.	After period.
Total nitrogen	5.5856	4.9066	5.2846	5.259
Total sulphur	0.3368	0.2553	0.2978	——
Neutral sulphur	0.0917	0.1035	0.1402	——
Inorganic sulphur	0.2081	0.1334	0.1442	0.2187
Ethereal sulphur	0.0371	0.0185	0.0133	0.0067
P_2O_5	0.8016	0.5526	0.5730	0.6959
Chlorides	0.3872	0.3000	0.3210	0.3631

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Spirochæta microgyrata (Löw) and mouse tumors.

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A black female mouse purchased from a breeder in New York City and belonging to a set of from 200 to 300 mice under observation by Mr. Horton of Columbia, in experiments on Mendelian inheritance, developed a tumor on the right fore leg. The shoulder and axilla were involved and the mouse could not use the leg in