As caffeine has been found in some species of Ilex, and as it is known to have a definite effect upon the heart, the question arises as to whether this effect is due to caffeine. It does not seem possible for the following reasons: (1) The substance considered here does not respond to any of the ordinary chemical tests used for the detection of the Zanthine compounds. (2) When caffeine is extracted from some species of Ilex and perfused through the frog's heart the effect produced differs definitely from that obtained with the substance studied in this work. (3) Species of the Ilex in which no caffeine can be demonstrated show the characteristic effect.

Summary. The pharmacological action and method of preparation of a substance obtained from various species of Ilex are described. The action of the drug resembles very closely that of the digitalis bodies. It produces first an increase in the amplitude of the heart by increased relaxation and increased systolic contraction, followed by decreased relaxation in diastole with slowing and finally systolic standstill. All attempts to obtain the substance in crystalline form were unsuccessful. The possibility of the substance being caffeine is considered.

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Effect of Peritoneal Lavage in Acute Uremia.

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Ganter,[1] Landsberger and Gnoinski,[2] Rosenak and Siwon[3] report favorable results of peritoneal lavage in nephrectomized rabbits and dogs. The end products of nitrogen metabolism dialyze into the fluid and can be removed with it. Bliss and his coworkers[4] report that the survival period of nephrectomized dogs treated with peritoneal lavage is from 13 to 16 days as compared with the survival period of untreated dogs, from 2 to 3 days. The experiments re-

[1] Ganter, G., *Muenchen Med. Wchnschr.*, 1923, **70**, 1478.

[2] Landsberger, M., Gnoinski, H., *Compt. rend. Soc. de Biol.*, 1925, **93**, 787.

[3] Rosenak, St., Siwon, P., *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1926, **39**, 391.

[4] Bliss, S., Kastler, A. O., Nadler, S. B., PROC. SOC. EXP. BIOL. AND MED., 1932, **29**, 1078.

ported herein were undertaken to investigate the value of peritoneal lavage in cases of temporary acute renal insufficiency, manifested by attacks of uremia following poisoning by bichloride of mercury. A series of 15 rabbits was used. The animals were given equally large doses of bichloride of mercury (30 mg. per kilo of body weight) by stomach tube. By means of a small rubber catheter 200 cc. of an isotonic salt solution at body temperature were injected into the peritoneal cavity of the animals. This fluid was removed after 30 minutes by syphonage through the same catheter. This procedure was repeated several times at each sitting and the hemoglobin and nonprotein nitrogen content of the blood, as well as the body weight of the animals, were determined before and after each experiment. No hydremic changes in the blood could be observed. The weight of the animals decreased slightly during the course of the experiments.

Figure 1 shows the curves of the nonprotein nitrogen values in the blood of treated animal F. 22 and control animal F. 18. After each washing of the peritoneal cavity, the nonprotein nitrogen con-

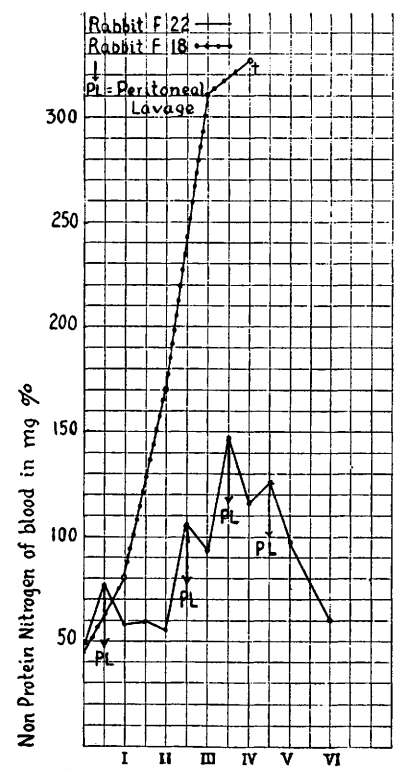

FIG. 1.

tent of the blood of rabbit F. 22 was considerably lower than before the lavage. After 5 days the kidney function of the animal was so far restored that no further washing was necessary. Control animal F. 18 died in uremic convulsions 3 days after the administration of the bichloride of mercury; the nonprotein nitrogen content of the blood was 325 mg. %. By means of peritoneal lavage rabbit F. 22 was carried over the short period of total renal insufficiency which caused the death of animal F. 18.

Table I shows the end results of our experiments.

TABLE I.

Treated Animals			Untreated Animals		
Prot. No.	Blood-NPN at end of Exp.	Remarks	Prot. No.	Blood-NPN at end of Exp.	Remarks
	mg. %			mg. %	Died days
F. 9	45	Twice periton. lav. Recovered.	F. 14	300	3
			F. 16	220	3
F. 12	235	Twice periton. lav. Died after 6 days.	F. 18	320	3
			F. 19	450	5
			F. 21	400	3
F. 15	70	Three periton. lav. Recovered.	F. 23	65	Recovered
			F. 25	80	5
F. 17	200	Three periton. lav. Recovered.	F. 26	220	4
			F. 28	280	Lavage discont. Died 6 days.
F. 20	195	Three periton. lav. Died after 7 days.			
F. 22	60	Four periton. lav. Recovered.			

Three of the 6 treated animals (F. 12, F. 17, F. 20) died with a high nonprotein nitrogen content of the blood. Rabbits F. 9, F. 15, and F. 22 recovered completely and were killed at the conclusion of the experiments in order to study the kidney changes. Post mortem examination of the animals showed no signs of peritonitis or peritoneal irritation. Microscopic examination of the kidneys of the recovered rabbits showed disappearance of the extensive tubular necrosis which had been present in the uremic animals. Post mortem examination of animals F. 12, F. 17, and F. 20 showed, in addition to the typical necrotic changes in the kidneys, a severe colitis with extensive mercurial necrosis.

Eight of the 9 control animals died from 3 to 6 days after the poisoning. In 7 animals the nonprotein nitrogen content of the blood was higher than 220 mg. % with a maximum of 450 mg. % in rabbit F. 19.

Fifty percent of animals treated by peritoneal lavage survived the period of acute uremia produced by bichloride of mercury poisoning. Only 11% of the control animals survived the experiment.