(curarin) was found to produce tetanic symptoms. It was found further that when the right aorta has been ligated and the tissues of one leg or of both were firmly contracted, under the exclusion of the sciatic nerves (Claude Bernard), curarin produced in most cases a stage of definitely increased reflexes and even of short tetanic attacks.

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On the convulsant action of acid fuchsin (Abel and Barbour) in cardiectomized frogs.

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In experiments carried out in this laboratory it was shown that in the absence of the cardiovascular mechanism alkaloidal solutions are well distributed through the body; that, for instance, injections of adrenalin cause dilatation of the pupil and injections of strychnine cause the development of spasms. It was further found that the action of some substances may be even greatly accelerated and more effective in cardiectomized than in normal frogs. Morphine, for instance, may cause a tetanus in 40 to 50 minutes.

In a recent communication of Abel and Barbour it was reported that an injection of a comparatively large dose (one mgr. and more per grm. body-weight) of acid fuchsin into a frog may cause after many hours (even as much as 20) the appearance of a series of convulsions. These investigators discovered further that in frogs in which the anterior third of the cerebral lobes was removed, such convulsions may appear very soon, 13 minutes and less, after an injection of only a small dose of the fuchsin, *e. g.*, 0.35 mgr. per grm. body-weight. With the consent of Professor Abel we investigated the behavior of fuchsin in cardiectomized frogs in which the brain remained intact. The following is a brief preliminary report of the results.

Observations were made so far on about forty frogs. In all cases in which fuchsin was injected into the dorsal lymph sac of cardiectomized frogs, convulsions never failed to appear and the time of appearance was never longer than half an hour after the

injection. In 27 frogs the injected dose of fuchsin was less than 0.1 mgr. per grm. of body-weight. In eighteen frogs the dose was 0.05 mgm. per gram body-weight, the time of onset of convulsions varying between 4 and 15 minutes. In some of these cases the entire dose for the frog amounted to less than one milligram of the fuchsin. In a few frogs the effective dose was not more than 0.025 mgm. per gram body-weight.

We have here another instance in which the action of a substance is greatly accelerated and much more effective in animals without a circulation than in normal animals. The experiments seem to show further that the minimum toxic dose of fuchsin is for cardiectomized frogs much smaller than even for frogs with the anterior part of the brain removed.

60 (585)

On the presence of dextrose in the exudate of pulmonary edema.

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Injection of adrenalin causes glycosuria and hyperglycemia. In some instances the animals which receive adrenalin die of pulmonary edema. The chemical composition of the exudate of pulmonary edema has never been investigated. An examination of the exudate of rabbits which died from pulmonary edema after receiving adrenalin revealed the presence of a considerable amount of dextrose. The causation of pulmonary edema by the injection of adrenalin is, however, a matter of mere accident and cannot be relied upon in a systematic study. After various attempts we found that inhalation of ammonia can be fairly well relied upon to produce edema and produce it in a quantity sufficient to make a quantitative test for a reducing substance. The exudate did not clot, which shows that no pure blood was mixed with it. The number of experiments, although not yet large, permits a definite preliminary report. Besides analyzing the pulmonary exudate, in most cases a quantitative analysis of the blood for reducing substances was made and in some instances also of the urine. Pulmonary edema was also produced in two normal ani-