71 (409)

The comparative toxicity of ethyl and amyl alcohol and their effect on blood pressure.[1]

By **WILLIAM SALANT.**

[*From the Pharmacological Laboratory, Bureau of Chemistry, U. S. Dept. of Agriculture.*]

The experiments were carried out on frogs, rabbits, cats and dogs. The alcohols were administered in various concentrations and were given by mouth, injected subcutaneously, or into the peritoneal cavity. The toxicity of amyl alcohol was in all cases much greater than that of ethyl alcohol. The difference in the toxicity of ethyl and amyl alcohol was even more marked in subacute intoxication. The experiments on frogs showed that the minimum fatal toxic dose of amyl alcohol is from one eighth to one seventh that of ethyl alcohol, while the toxic dose of amyl alcohol for the rabbit is only about one fourth to one half that of ethyl alcohol.

The effect of ethyl and amyl alcohol on blood pressure.— The experiments were carried out with 2 per cent. solutions on healthy dogs 8 to 10 kilos in weight, and on cats. Morphine-ether narcosis was employed for the dogs, and ether alone for cats. Injections were made from a burette into the femoral vein. The fall of blood pressure after amyl alcohol was introduced, was considerably greater than that after the introduction of the same quantity of ethyl alcohol. In some experiments, the injection of 15 c.c. of 2 per cent. amyl alcohol in thirty two seconds caused a fall of blood pressure of 80 millimeters of mercury, while the same amount of ethyl alcohol injected in four seconds was followed by a fall of blood pressure, amounting only to 20 millimeters of mercury. In other experiments in which from 25 to 50 c.c. of 2 per cent. ethyl alcohol caused little noticeable change or only a slight fall of blood pressure, after the injection of the same quantities of amyl alcohol, the maximum fall of blood pressure amounted to 40 and 95 millimeters of mercury. The recovery was also much slower in all cases after amyl alcohol and was much more gradual than the fall of blood pressure. Experiments with from 3 to 11 c.c. of 2 per cent.

[1] Published by permission of the secretary.

amyl alcohol carried out on cats has likewise shown a depressing action on blood pressure, while 25 c.c. of ethyl alcohol failed to show an appreciable change. Very small quantities of amyl alcohol (3 c.c. of a 2 per cent. solution) failed to reduce blood pressure in dogs; with larger quantities of it (10 c.c.) the fall of blood pressure was 8 millimeters of mercury, when injected in one hundred seconds. The same amount, however, when injected in seven seconds lowered the blood pressure 50 millimeters of mercury. After section of both vagi in dogs, the action of amyl alcohol was not constant; in two experiments the fall was greater, in one it was less, than with the vagi intact. The action of ethyl alcohol under these conditions likewise varied. In one experiment, amyl alcohol, 15 c.c. of a 2 per cent. solution, was injected after the introduction of atropine sulphate, both vagi being cut; the fall of blood pressure was not as great as before the injection of atropine with vagi cut, but the recovery of blood pressure to the same height as it was before the introduction of atropine occurred in from two to five minutes as against 35 seconds during the control period.

In this connection, it might be mentioned that some observations on the effect of caffeine on the depressing action of alcohol, amyl and ethyl, have been made. In both instances, there was a marked retardation of recovery of blood pressure. After the injection of 25 to 50 c.c. of 2 per cent. solutions of caffeine, the recovery was delayed, fifteen or twenty minutes.

72 (410)

Pentosuria.

By **L. B. STOOKEY.**

[*From the Physiological Laboratory of the University of Southern California.*]

During the past two years one hundred urines which reduced Fehling's solution slightly were examined for identification of the reducing substance. In fifteen cases pentose was found to be present. Identification was made by (1) phenyl pentosazone crystals, (2) phloroglucin reaction, (3) absorption spectrum. The nature of the pentose was not determined. In all cases several specimens were examined under dietetic precautions in order to exclude alimentary pentosuria. In these fifteen cases no carbo-