40 (565)

Experiments with chloroform, administered by intratracheal insufflation, in strychnine poisoning.

By **T. S. GITHENS** and **S. J. MELTZER.**

[*From the Department of Physiology and Pharmacology of the Rockefeller Institute for Medical Research.*]

Soon after the introduction of the method of intratracheal insufflation, experiments were begun to study the control of strychnine poisoning by means of this method. So far three series of investigations were carried out. In the first series Shaklee and Meltzer employed, besides insufflation, curare and intravenous infusions of Ringer's solution. In these experiments it was first established that in intravenous injections, 0.4 mgr. of strychnine represents a reliable fatal dose per kilo dog. When using insufflation, curare and Ringer's solution quite a large percentage of dogs were saved which received even more than the fatal dose. Out of 6 dogs which received 0.5 mgr. per kilo, 5 were saved, and out of 22 dogs which received 0.8 mgs. p. kilo 13 were saved.

In a second series of experiments, carried out by the present authors and communicated at the last meeting of the American Pharmacological Society, ether was substituted for curare. Twenty dogs which received 0.8 mgr. strychnine per kilo, that is, twice the fatal dose, were subsequently treated by intratracheal insufflation, ether and intravenous injections of Ringer's solution. All these dogs survived, none died later from after effects and when finally killed the autopsy revealed no abnormal conditions in any of the animals.

In medical practice chloroform is frequently employed in human cases of strychnine poisoning. We have therefore carried out a series of experiments in which chloroform was used instead of ether. We wish to present here the results of these experiments very briefly. Of 21 dogs which received intravenously 0.8 mgr. strychnine per kilo and were treated with chloroform and insufflation 12 survived and 9 died. The contrast to the series in which ether was used is striking. Furthermore, of these dogs only 11 received also infusion with Ringer's solution, 10 did not

receive such infusion. Of the 11 dogs which received Ringer's solution 6 died on the table and 2 died a few days later. Of the 10 animals which did not receive Ringer's solution, 7 survived, two died on the table and one died about 12 hours later. While when using ether the intravenous infusion was a definite favorable factor, it proved to be definitely unfavorable when chloroform was employed. Finally in nearly all the chloroform cases the autopsy revealed pathological conditions, either of the lungs or of the kidneys or of both. The acute deaths were brought about by pulmonary disorders accompanied mostly by pulmonary œdema.

When using the intratracheal insufflation there is no doubt that ether is a safer method than chloroform, at least in the treatment of strychnine poisoning.

41 (566)

A demonstration of osmotic pressure exerted by fat.

By **JACOB ROSENBLOOM** and **WILLIAM J. GIES.**

[*From the Laboratory of Biological Chemistry of Columbia University, at the College of Physicians and Surgeons, New York.*]

In the first of two demonstrations, the authors lowered a cylindrical *rubber* bag, one and one half inches in diameter and eight inches long, into an oiled *muslin* bag of about the same dimensions. The rubber bag was then filled to overflowing with olive oil. The rubber bag expanded, as the oil filled it, to the full length and width of the muslin sheath. The sheath prevented further extension of the rubber bag and imparted rigidity to the osmometer that was ultimately constructed. The full double bag, with its mouth wide open, was then raised so as to enclose about an inch of the lower end of a long glass tube which was firmly supported vertically above the demonstration table. The glass tube was 5 feet long and its bore was 4 mm. in diameter. Ligatures were tightly secured around the neck of the double bag against the immersed lower end of the vertical tube. The bag then hung directly from the end of the tube. The bag and its sheath were in a tightly distended condition and a station-