As a control to the above experiments, intravenous injections were made of 0.9 per cent. sodium chloride, of which was given 8 c.c. per kilo to each of two dogs exhibiting a typical coli fever. in the first fifteen minutes there was observed no change whatever in the temperature which subsequently ascended to points 0.7° C. and 0.4° C. respectively higher than the former febrile level. The blood solids on the other hand showed a slight diminution after half an hour, and the hemoglobin fell within the first quarter of an hour. (See fig. 3). The control experiments therefore showed that isotonic NaCI in amounts comparable to the dextrose injections is not able to reduce the temperature of coli fever dogs, nor is the increase in blood volume as marked as when the dextrose was given either to the normal or the fever dogs.

It is therefore concluded that the antipyretic effect (not noted in health) of intravenous dextrose injections is due to osmotic action by which in fever dogs an unusually profound increase in the fluids of the blood results for a short time. This increase in fluid is of value to the animal in promoting heat elimination. The tissues in coli fever appear to contain a higher percentage of "available water" than is normally present. Sensitivity to antipyretic drugs can thus be accounted for.

81 (1541)

Preparation and refining of diphtheria toxin-antitoxin.

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The mixture has been readjusted so that after standing eight months and longer, late paralysis will occur when the mixture is injected into guinea pigs. This is done by adding to each L+ dose one unit of a properly aged antitoxin. When five mils of this mixture is injected into guinea pigs acute death occurs within four or five days. The mixture is then stored in a refrigerator for a month to six weeks for stabilizing.

On reinjecting five mils, after storage, the guinea pigs die of late paralysis after twenty to twenty-five days. It is then properly

balanced and safe for distribution. Prepared as stated it retains its balance eight months and possibly much longer and its practically full immunizing value at least a year. What slight deterioration occurs takes place equally in the toxin and antitoxin and therefore there is no danger of the mixture becoming toxic.

Constitutional disturbances are frequent. They are usually observed in adults, especially in those who give a pseudo Schick reaction. These disturbances are mostly due to the bacillary substances which are present in the diphtheria toxin.

Methods for refining the mixture for the complete removal of the bacillary substances have not been found. Considerable of these reacting substances can be eliminated through the use of ammonium sulphate, sodium chloride and alcohol.

82 (1542)

Further observations upon reflex gastric hypermotility.

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Increase in the force or rate or change in the direction of gastric contractions have followed irritation of the gallbladder, duodenum, or appendix, experimentally, and these motor changes have been associated with pathological gallbladders, duodenums, and appendices, clinically.[1] It may be assumed, subject to further experimental proof, that these organs constitute three of the possible foci of reflex gastric stimulation. Were the nerve paths known along which these impulses travel, it might be possible to explain these motor responses and group other possible causes of gastric motor unrest.

Other observations of abnormal reflex gastric activity in which the pyloric and fundic parts functionate separately are the following:

1. Prostalsis of the pars pylorica, alone, occurring in the course of irritation of the above organs and after thoracic vagus section.

2. Anastalsis of the pars pylorica, alone, associated with traumatization of the gallbladder.

[1] PROCEEDINGS SOC. EXP. BIOL. AND MED., Vol. XVI., No. 7.