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Demonstration of animals whose thoracic organs have been operated upon.

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The animals have been operated upon by the method of Meltzer. At first, a few relatively simple experiments were performed, such as the resection of a pulmonary lobe, the extirpation of a segment of the middle part of the esophagus, the dissection of the mediastinum by opening the two pleuræ and the pericardium, and resection of a small part of the superior vena cava and its replacement by a piece of a jugular vein. The animals recovered completely with the exception of one which died of pleurisy a few days after the operation.

Then I began some researches on the surgery of the thoracic aorta. Six animals were operated on. In three experiments, the upper part of the descending aorta was cut transversely and sutured. The three animals recovered without incident.

In the fourth experiment, the ascending part of the aorta was cut longitudinally about three centimeters above the heart and sutured. The animal is now in good health.

The fifth experiment consisted in severing the ascending aorta in its middle part and in interposing between its ends a segment of a large jugular vein, preserved in cold storage. The circulation was interrupted for seventeen minutes. The animal remained in excellent health, but the hind legs became contractured, the animal walking as if it had wooden legs. The contracture decreased progressively. Nevertheless, at the present time, six weeks after the operation, the legs are yet a little stiff.

Then I performed a sixth experiment with temporary tubing of the aorta in order to avoid medullary complications. The upper part of the descending aorta was laid open by a longitudinal incision, and a paraffined tube was inserted into its lumen and temporarily fastened. This small operation involved only a short interruption of the circulation. The circulation was imme-

diately reëstablished, and it was possible to extirpate leisurely the anterior wall of the part of the aorta that had been tubed and to substitute for it a segment of vena cava preserved in cold storage. This operation lasted twenty-four minutes. The tube was then taken out. The animal recovered without incident. He died suddenly of hemorrhage twelve days after the operation. The accident was due to a fault of technique in preserving the veins in cold storage.

These experiments show that operations on the thoracic aorta need not be very dangerous, and that, by Meltzer's method, they are as simple as abdominal operations.

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The mutual antagonistic life-saving action of barium and magnesium. A demonstration.

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For rabbits, 1.2 grams of magnesium sulphate per kilo body-weight are invariably fatal in intramuscular injection; they usually die in less than twenty minutes. The rabbit to the right (*A*) received such a dose and has been dead for some time. The rabbit in the middle (*B*) received a similar dose of magnesium and is still alive; it breathes regularly. This animal received also an intravenous injection of barium chloride, which is the cause of its surviving the fatal dose of magnesium.

By a special study we are enabled to state the mode of the antagonistic action of the barium which is this: the fatal action of magnesium is due to a paralysis of respiration and barium counteracts just this effect of magnesium. It differs from the antagonistic action of calcium inasmuch as calcium antagonizes all the effects of magnesium, while barium picks out only the respiration, the animal remaining anesthetized and paralyzed.

This surviving rabbit (*B*) illustrates, however, also another result. The rabbit to the left (*C*) is dead from a dose of barium