tubercle bacilli. A bronchoscopy disclosed the expulsion of pus from the left main bronchus when the woman coughed.

Morphine sulfate 11 mg. and scopolamine hydrobromide 0.43 mg. were given hypodermically at 7:00 a.m., and analgesia was accomplished with 18 cc. of a hypobaric solution of nupercaine (1:1500) injected intrathecally at 9:05 a.m. between the third and fourth lumbar spines. The position of the patient was that of lying upon the right side with the head of the operating table elevated. The nupercaine solution had been warmed approximately to body temperature and analgesia appeared in four minutes and rose to the fourth thoracic segment. As frequently happens when no vasopressor drug is given, the blood pressure fell from 104 mm. Hg systolic, 70 mm. Hg diastolic to 60 mm. Hg systolic and 40 mm. Hg diastolic and remained at approximately this level for the duration of the operation.

Pneumonectomy was accomplished with less difficulty than was expected. The time required was two and one-half hours. The thing of interest about the case was that the pulse rate, which had been stable at 80 per minute for one and one-quarter hours, slowed to 60 per minute when the closure of the defect in the mediastinal pleura was begun. After thirty minutes at this rate, the pulse slowed to 42 per minute. The anesthetist became concerned and asked the surgeon if the vagus nerve had been subjected to stimulation. The reply was that the last suture had been placed in its immediate vicinity. This suture was released and the pulse rate returned promptly to 60 per minute and did not change during the remainder of the operation.

Nitrous oxide had been given to this patient at intervals for her comfort but no hypoxia was thought to be present at any time, least of all when the bradycardia occurred. A quite satisfactory convalescence has followed the operation. It is suggested that vagal stimulation was the cause of the slow pulse and also that such a condition should be alleviated as soon as possible or else a less fortunate result may occur.

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APPARATUS * FOR PREVENTION OF AIR EMBOLISM DURING VENOCLYSIS

During intravenous injection of fluids, a gaseous embolism may occur, which is, of course, extremely dangerous (1-11).

Although physicians and physiologists may not agree on the quantity or the quality of gas or air that may be required to interfere seriously with the circulation of blood, they do agree that it is much better to prevent, whenever possible, the entrance of particles of air or gas into the blood circulation.

Utilization of apparatus for intravenous administration of fluids is a frequent occurrence and any such occasion may permit the entrance of air into the veins, especially if the fluid concerned is blood or plasma. In fact, because of an existing difference of superficial tension between the fluids and the rubber tube, air inside the tube gathers in bubbles and sticks to the wall of the tube, from which it is not readily dislodged. In performing a transfusion with blood and plasma, the operator may take out a certain number of these globules, but it is almost impossible to remove them all, and in the attempt to do so there occurs a considerable loss of blood or plasma. From any angle, this proceeding is not satisfactory, clean, or economical.

The small device, "Trapair," dispenses of most of these inconveniences. This device removes the smallest globules of air from the fluid rapidly and in a clean and economical way; in addition, it permits injection into the same vein of any other fluid required at the same injection, without inconvenience and with no damage to the rubber tubing.

This device is inserted into the rubber tubing a couple of inches from the end. To use it, the bowl is turned upside down and filled with fluid. When the bowl is full, it is turned back to an upright posi-

* Commercial name of apparatus, "Trapair," manufactured by Desbergers Bismol Laboratories, Montreal.
tion (fig. 1, insert 3) with certainty that there is no more air in the tube. Should there be a residue of air, of necessity it will pass into the "Trapair" and accumulate in the top of the bowl. This bowl contains something more than 10 cc. of air. If, as may sometimes occur, there should be more than 10 cc. of air in the tube, the operator introduces a short sterile hypodermic needle through the cap of the "Trapair" and the confined air escapes rapidly (insert 4).

If a second fluid is to be injected concurrently with the first, the operator inserts a long hypodermic needle into the device so as to reach the bottom of it, in the direction of the injection point on the patient's arm.

I have used this device with a great deal of satisfaction for several months. It facilitates transfusion of blood or plasma and is a certain guarantee against air embolism. It facilitates also simultaneously the administration of any other required fluid into the same vein, by injection through the cap of the "Trapair."

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REFERENCES

MODIFICATION OF THE CONVENTIONAL BLOOD PRESSURE STETHOSCOPE USED IN OPERATING ROOMS

During the administration of an anesthetic, particularly in long operations, the blood pressure sounds not infrequently become diminished or entirely disappear. This occasions a certain amount of distress in direct proportion to the seriousness of the existing state of the circulation. However, frequently the cause is simply a loosening or misplacement of the stethoscope diaphragm which, with the model in use at present, seems to occur with little provocation. The proper readjustment of the apparatus on the draped patient, with the surgeon usually standing by the elbow, is attended by inconvenience both to the surgeon and the anesthetist. It is with the idea of obviating these difficulties that I offer a new design for the blood pressure stethoscope and the method of attaching it to the arm.

Briefly, this instrument consists of an oblong piece containing the diaphragm (which fits into the antecubital fossa), a split elastic strap attached to one end of the arm piece, and a strap of nonelastic material containing eyelets attached to the other end of the arm piece. The split elastic strap has a small hook which is inserted into one of the eyelets of the rear strap to hold the scope firmly in place. The body of the stethoscope is 1¾ inches and the neck is ¾ inch, making an over-all lengthwise dimension of 2½ inches. The neck is ½ inch in diameter, allowing the usual rubber tubing to fit snugly.

Fig. 1. Complete view of instrument.