A New Technic for the Continuous Recording of the Cardiac Output.* (17968)

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The output of the heart, or a portion of it, has been measured directly in the anesthetized animal with different types of flowmeters inserted either into the venae cavae(1,2) or the aorta(3,4). Recently Seely and Gregg(5) designed a technic for the measurement of the pulmonary artery outflow by means of an electromagnetic rotameter. The technic described in this paper permits the continuous recording with an electromagnetic rotameter(6,7) of the output of the left ventricle in the anesthetized dog with cerebral circulation intact.

In dogs anesthetized with sodium pentobarbital, the chest is opened through a midsternal incision. Under artificial respiration, the brachiocephalic trunk, a segment of the left subclavian artery close to the aorta, a segment of both common carotid arteries and a segment of the thoracic aorta distal to the left subclavian artery are dissected free. Heparin is then administered, first a dose of 5 mg per kg of body weight, then 3 mg per kg every half hour. As seen in Fig. 1, the aortic end of the left subclavian artery A is first connected to the tubing B leading into the flowmeter (rotameter) C. Then the cephalic end of the right carotid artery D is cannulated and thereby connected to the tubing F coming from the flowmeter C. At this time, the blood flows from the aorta G into the right carotid

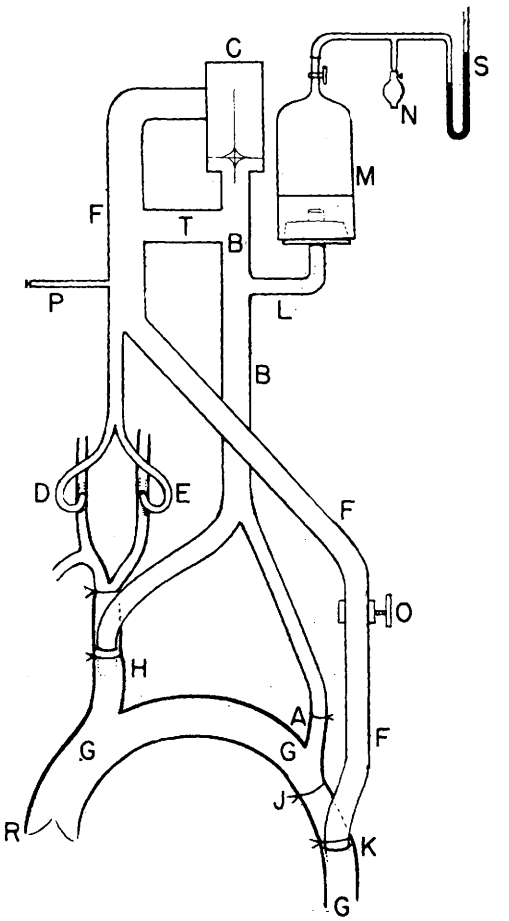

FIG. 1.
Schema of the apparatus used to measure and record the output of the left ventricle. Description in text.

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artery D via the left subclavian artery A, inflow tube B, flowmeter C and outflow tube F. The left common carotid artery E is then also cannulated. At this point, the aortic end of the brachiocephalic trunk H is cannulated and connected to the inflow tube B. The aorta is then ligated at J, just beyond the origin of the left subclavian artery, then cannulated at K and connected to the outflow tube F. When the aorta is ligated at J just before being cannulated, an excessive rise of blood pressure in the aorta and its branches above the ligature at J is prevented by allowing blood to escape via tube L into a buffer reservoir M, the pressure of which is adjusted by a sphygmomanometer bulb N. The amount of blood allowed in the reservoir M is such as to maintain the blood pressure in the aorta and its branches above the ligature at J only slightly above the level of the blood pressure before the ligature of the aorta, the level being read from a mercury manometer S. When the aorta has been cannulated at K, the screw clamp O compressing the outflow tube F is gradually released and blood is slowly pumped back into the dog from the buffer reservoir M. This is done slowly and gradually to prevent any sudden or marked drop in blood pressure in the aorta and its branches above ligature J. When the procedure is completed, the blood flows from the aorta, via the brachiocephalic trunk H and the left subclavian artery A into the inflow tube B and the flowmeter C. From the flowmeter C the blood flows into the common carotids D and E and the descending aorta at K, via the outflow tube F. It can be seen that the blood flowing through the flowmeter is the output of the left ventricle except the coronary blood flow and the amount of blood drained by the few small arteries originating from the aorta between R and J. A tubing, T, which allows shunting of the blood past the rotameter, is clamped when the cardiac output is being measured and is only used to record a zero flow deflection without interfering with the circulation. The buffer reservoir M has also been found useful in damping the pulsation of the flow. The arterial blood pressure is recorded photographically by a Gregg manometer, P. This new technic of continuously recording the output of the left ventricle in the anesthetized dog with cerebral circulation intact has been used successfully in several studies.

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Susceptibilities of Pleuropneumonia-like Organisms to Some Selective Bacteriostatic Agents. (17969)

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Although pleuropneumonia-like organisms (PPLO) are occasionally isolated in pure culture from various pathological processes, more often these organisms are present along with bacteria of various kinds. Frequently it is very difficult and sometimes it is impossible to isolate the PPLO in pure culture because they require an enriched medium and an incubation period of a few days. The small size of the colonies of the PPLO compared to that of ordinary bacteria together with the inability to fish off colonies of the PPLO with an inoculating needle contributes to the difficulty of isolating them in pure culture. It would be highly advantageous if some substance could be added to the culture medium which would inhibit bacteria of various kinds but allow the PPLO to grow. The determinations of the susceptibilities of PPLO from human sources to some of the

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