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Mobilization of the Inorganic Constituents of the Blood by Vagal Stimulation.*

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Since it was necessary to carry out a part of this investigation under ether anesthesia, it was first necessary to establish type graphs of the concentrations of Ca, K, P, Na, and of Mg during 2 hours of ether anesthesia. This was done on 20 normal dogs. The re-

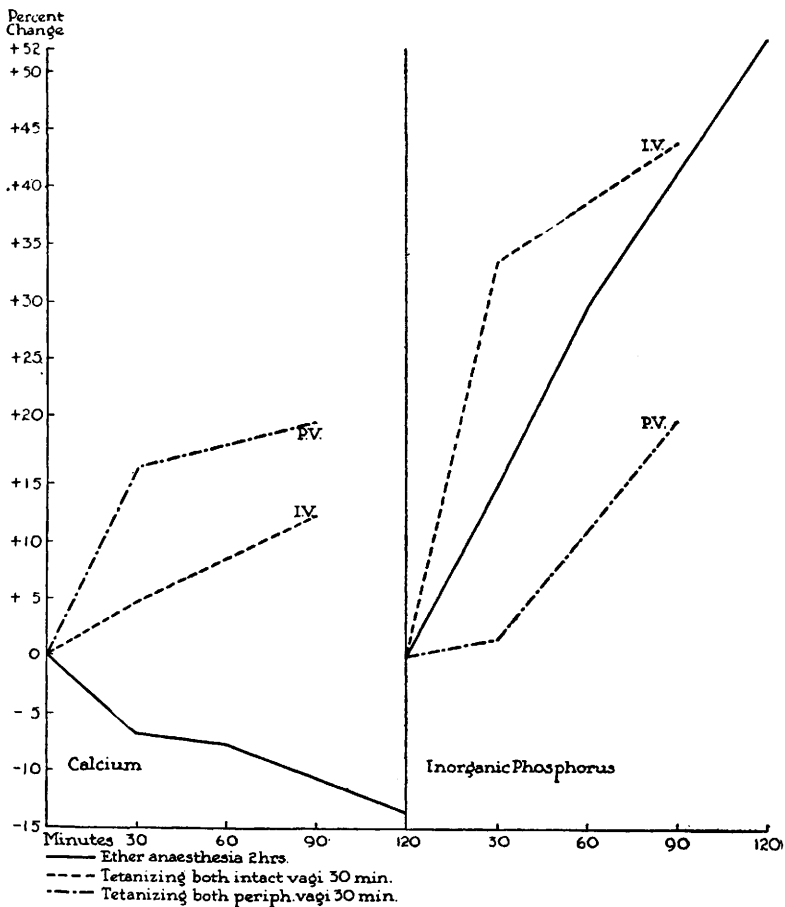


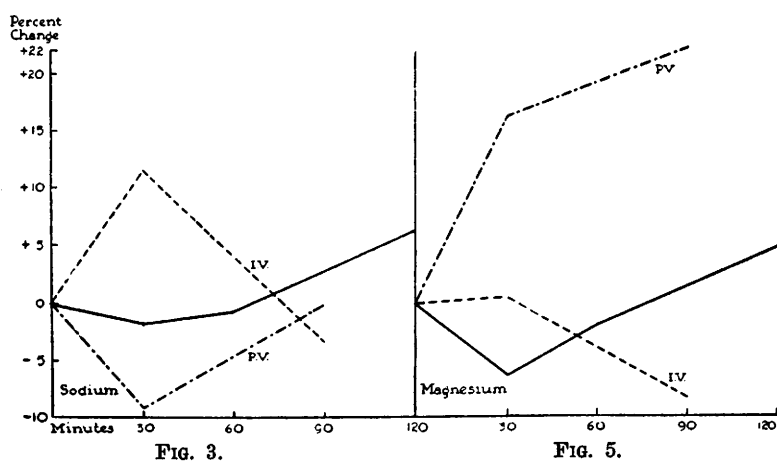
FIG. 1.

FIG. 2.

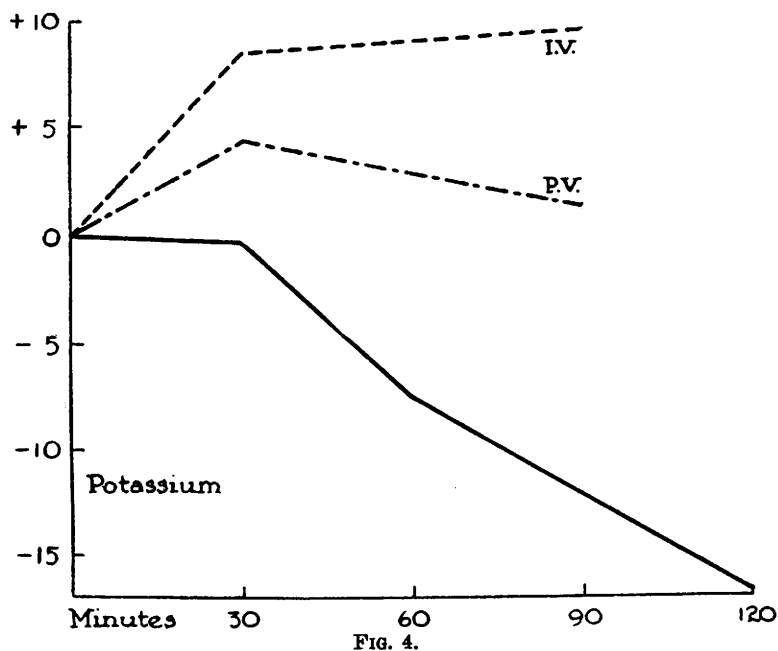
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sults in general conform well with those reported by other investigators.

In a second series of 13 dogs, anesthesia was induced after a sample of heart blood was taken. Both vagi were then isolated and shielded electrodes from a common inductorium attached. The



Percent
Change



intensity of current was adjusted so that neither heart rate nor respiration were markedly affected. In no case was the former decreased more than 5 beats per minute. It is believed that this represented a stimulus of physiological intensity. A tetanizing current so adjusted was applied for 30 minutes after which a second blood sample was drawn, and a third at the end of another hour. In a third series of 8 dogs similar technic was employed except that both vagi were sectioned and the electrodes were applied to the peripheral ends. The composite graphs constructed on a percentage basis are shown in the accompanying figures. With exception of potassium the responses in the individual experiments conformed well with the composite graphs which may, therefore, be considered as type graphs.

It is recognized that the anesthetic is a complicating factor and that these experiments merely demonstrate the modification of the anesthetic graph by vagal stimulation.

The differences observed between peripheral vagal stimulation and intact vagal stimulation may be ascribed to antagonistic reflexes aroused by impulses conveyed centrally from the point of stimulation in the latter group of experiments. A point of some interest is the similarity of all the graphs for calcium to those for potassium.

These experiments demonstrate that, with the possible exception of inorganic phosphorus, the concentration of inorganic salts in the blood may be influenced by the autonomic nervous system, regardless of the immediate mechanism of nervous control.

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Experimental Production of Mucous Plugs in the Bronchi of Dogs.*

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The most commonly accepted explanation for the production of post-operative pulmonary atelectasis is bronchial obstruction, either by a mucous plug or by bronchial secretion. The obstruction of the bronchus or bronchi must be complete so that air can not enter the lung distal to the obstruction. The trapped air or gas in this ob-

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