

The Estimation of the Blood Pressure.

Dr. George J. Heuer, Assistant Resident Surgeon at the Johns Hopkins Hospital, Baltimore, contributes to its *Nurses' Alumna Magazine* an interesting article on the above subject. He writes:—The practical importance of estimating the blood pressure in man has long been recognised both by physicians and physiologists. Previous to the introduction of instruments of greater or less precision, the palpating finger was the blood pressure apparatus of the physician, who, by digital compression of the vessel wall, was able to judge more or less accurately the arterial tension of his patient.

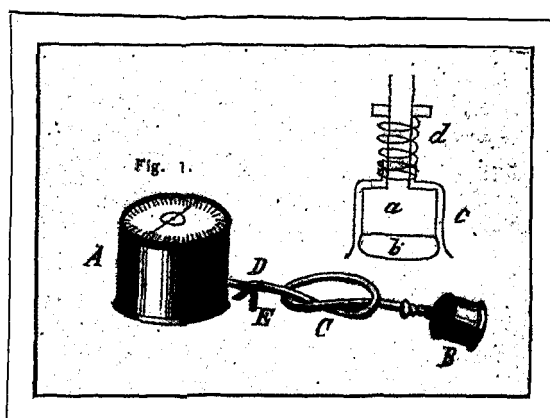
While this was an imperfect means of estimating blood pressure, especially in the absence of instruments for comparison, the idea of measuring it by compression of the vessel wall was important, and has formed the basis upon which all the instruments for measuring arterial pressure have been constructed.

Although considerable work had been previously done upon the determination of the blood pressure, especially by Marey, no practical instrument for estimating the arterial tension in man had been devised until Von Basch in 1887 published a description of his instrument. He had previously, in 1881, described an instrument to which he gave the name of sphygmomanometer for determining the human blood pressure, but it had not proven to be of practical usefulness. The instrument which he

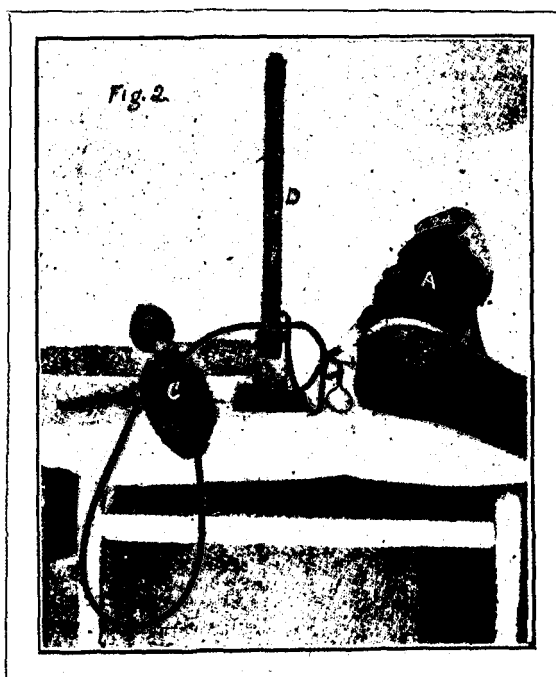
described in 1887, called by the same name, embodied the principles of his first instrument, was a distinct improvement over it, but still was open to several objections. It is shown in the accompanying cut. Fig. 1. As originally described, it consists of a metal cylinder (B) called an air pelotte (seen in vertical section in upper part of cut) over one end of which is tied a rubber membrane and the other end of

which is connected by a rubber tube with the manometer (A). By means of the cock (D) the entire system is filled with air under low pressure so that the rubber membrane bulges a little. In using the instrument, the cylinder (B) is placed along the course of a blood vessel, the slightly bulging membrane in contact with the skin. Pressure is exerted upon it until the vessel is obliterated—that is, until the pulse disappears below the point of pressure. The pressure necessary to accomplish this is read off the manometer and is equal to the blood pressure. While such an instrument gives a fairly accurate value of the blood pressure in superficially placed vessels, such as, for example, the temporal artery, it becomes less reliable when used to determine arterial tension in vessels deeply placed or covered by a thick layer of muscle or fat.

Since the appearance of the Von Basch Sphygmomanometer, a number of different instruments have been described. His instrument was adapted chiefly to estimate the systolic or maximum blood pressure; and the greater number of the instruments which have followed are adapted to the same purpose. With others the diastolic or minimum pressure



The Von Basch Sphygmomanometer.



The Riva-Rocci Sphygmomanometer.

Modification used at present in the Johns Hopkins Hospital.

[previous page](#)

[next page](#)