pital. This method of producing complete loss of consciousness seems to be particularly well adapted to war surgery. . . . The subject of general anesthesia has been neglected to a great extent in the majority of dental schools in this country. Now there is a pressing need for trained men in this field, and it is imperative that dental schools not now having an adequate course in this subject immediately institute such a course." 9 references.

J. C. M. C.

EVANS, D. S., AND MENDELSSOHN, K.: *A New Instrument for Visual Determination of Blood-pressure. Part I. Physical Considerations.* Proc. Roy. Soc. Med. **36**: 465–467 (July) 1943.

"We use an inflated cuff of the usual type, connected to a differential membrane manometer, which records pressure oscillations by means of a light beam and scale. Pressure pulsations from the cuff are led directly into one side of the manometer, but the other chamber is connected to the cuff through a capillary. This equalizes the mean pressures on the two sides of the membrane, but admits rapid pressure changes such as pulsations, to one side only. The mean pressure in the whole circuit is recorded on an aneroid manometer. . . . We have . . . used a second cuff inflated independently, for . . . determination [of the systolic pressure]. The second cuff is placed proximal to the first and is used for occluding the artery. The first cuff, inflated to a moderate pressure, then serves as a detector. If the pressure in the proximal cuff is above systolic there is no blood flow and no pulsations in the detector. If the pressure in the proximal cuff is lowered, blood will begin to flow when its pressure is just equal to systolic, and pulsations will then start suddenly in the detecting cuff. This effect is used to determine systolic pressure. A third use of the apparatus is for the continuous indication of pulse pressure. It can be shown that if the detecting cuff only is used, at a constant low pressure below diastolic, say, 25 mm. of mercury, then the size of the recorded pulsations is a measure of the patient's pulse pressure. The machine can be left set in this way for long periods, and gives at a glance an indication of the patient's pulse pressure and heart rate."

J. C. M. C.

MALLINSON, F. B.: *A New Instrument for Visual Determination of Blood-pressure. Part II. Clinical Aspects.* Proc. Roy. Soc. Med. **36**: 467–468 (July) 1943.

"There are several advantages to be derived from keeping records of blood-pressure during surgical operations. A chart of the patient's condition stretching back into the immediate past during the course of a severe operation is obtained, which is of great value in assessing his condition and estimating his capacity to withstand the infliction of further trauma, thus facilitating the adaptation of the surgeon's operational measures to the patient's best advantage. This charted record also enables the anesthetist to anticipate the onset of surgical shock and take measures to control it in good time. . . . Blood-pressure control, particularly observation of the pulse pressure, during resuscitation of the severely shocked patient is essential if consistent and successful results are to be achieved in the determination of the optimum time for operation. . . . Just over a year ago (after several years of experimenting with many types and modifications of visual apparatus) my attention was drawn to the work of Drs. Mendelssohn and Evans. Since then I have used and experimented clinically with all the alterations and modifications of their original apparatus which have resulted in

this final experimental model now presented. This model I have had in constant use and have recorded more than 100 resuscitation and operation charts, besides providing several sets of figures in cases of arteriovenous aneurysm of the limbs and other circulatory abnormalities in which the auditory method could not satisfactorily be applied. The experience thus gained has been sufficient to convince me that here at least is a definitely improved system. Systolic pressure is estimated easily. Diastolic pressure is much more sharply defined than hitherto. Both estimations show a satisfying degree of consistency, ± 2–3 mm. mercury being a pretty constant limit of variation.

"A feature quite new to me in clinical blood-pressure recording is the facility afforded by the instrument for continuous observation of pulse-pressure. This is of great value during touch-and-go periods in operations on severely shocked patients, enabling the anaesthetist to watch minute-to-minute changes and to gauge response to transfusion and other measures at a glance, and from a distance of several feet if necessary, without his having to take repeated readings at a time when he is likely to be fully occupied."

J. C. M. C.

POLDERMAN, HUGO; MCCARRELL, JANE D., AND BEECHER, H. K.: *Effect of Anesthesia on Lymph Flow (Local Procaine, Ether, Pentobarbital Sodium)*. J. Pharmacol. & Exper. Therap. **78**: 400–406. (Aug.) 1943.

"Evidence that anesthesia causes a shift in the ratio of plasma volume to interstitial fluid volume can be found in a number of studies. Moreover, the direction the change appears to take depends upon the nature of the anesthetic agent employed. This suggested to us that an effect of anesthesia on lymph flow might be demonstrated, and on examining this possibility we have observed striking alterations in the rate of lymph flow, depending upon whether local, ether or barbiturate anesthesia is employed. In addition to reasons of pharmacological interest there are practical reasons why such a demonstration is helpful. . . . This study is based upon observations made in 26 mongrel dogs. . . . 1. When lymph is collected under standardized conditions, it is observed that in comparison with the volume flow under local anesthesia that (*a*) a barbiturate, pentobarbital sodium, reduces this flow about 50 per cent and (*b*) that ether anesthesia increases the flow about 50 per cent above that found under local anesthesia. 2. The increased lymph flow under ether is associated with increased hematocrit and plasma protein values; the decreased lymph flow under the barbiturate is associated with decreased hematocrit and plasma protein values. These plasma protein changes support the view that under a barbiturate there is a shift of fluid from the tissues to the blood stream, with the reverse process occurring under ether. The concentration of protein in lymph collected under a barbiturate is appreciably higher than it is under ether. 3. It is probable that the often referred to 'dry' animals encountered in lymph studies are frequently to be explained by the fact that most of these studies have been conducted under barbiturate anesthesia. Ether can be utilized to produce a profuse lymph flow when this may be desirable. 4. The observations reported here of the effect of a barbiturate and of ether anesthesia on lymph flow appear to provide a useful step in the explanation of why surgical shock appears sooner under ether than under a barbiturate in the intestinal trauma experiments of Seeley, Essex and Mann. 5. This study provides a likely explanation for the significant reduction in weeping by a burned surface effected by a barbitu-