taneously before the subarachnoid injection was done.

"The pertinent EKG findings were:

(a) Before subarachnoid block:
   Bilateral ventricular hypertrophy 10 (1 with bundle-branch block)
   Left ventricular hypertrophy 5 (1 with bundle-branch block)
   Right ventricular hypertrophy 5
   Sinus tachycardia 7
   Auricular fibrillation 11
   Nodal rhythm 2

(b) 18 patients receiving ephedrine showed an increase in cardiac rate which lasted up to 30 minutes. The 2 patients without ephedrine showed no change. All showed a slowing of the rate once the spinal block took effect.

(c) 2 patients with nodal rhythm reverted to sinus rhythm after i.v. injection of 100 mg. of procaine.

(d) No change in the occurrence of ventricular extrasystoles in 3 patients.

(e) One QRS complex showed a left axis deviation which persisted as long as the clinical improvement that followed the subarachnoid block. All QRS complexes increased 0.02 to 0.04 second under spinal.

(f) 12 negative T waves became positive under spinal block.

"Studies are in progress to correlate pulmonary artery pressure, minute volume and arterial oxygen with the striking clinical improvement of pulmonary edema, tachycardia, urinary output, cyanosis and dyspnea under spinal anesthesia. Pulmonary artery pressure has been seen to drop 25 and 42 mm. in 2 cases, the minute volume to increase up to 1½ ltr.

"The authors feel strongly that spinal anesthesia has its definite place in medical and surgical treatment of the decompensated cardiae."

E. G. B.


"In a recent comprehensive review of the theories of narcosis and anesthesia, it is made evident that the changes occurring in cells, enzyme systems, and homeostatic mechanisms during the state known as anesthesia do not present a sufficiently consistent pattern to permit a definitive analysis of the process of anesthesia. . . . As a consequence of this ignorance regarding the fundamental nature of narcosis, the anesthesiologist practices his specialty with a high degree of empiricism. . . . Not knowing the basic action of the anesthetic drug employed, it is imperative that the anesthetist make critical and constant observations of the patient's reactions to the drug. . . . The anesthetist cannot help but be interested in any development in the basic sciences which will help him better to understand the phenomena encountered in his daily practice. . . . "

"Oximetry has reached a point at which it is a useful clinical and research tool. . . . Catheterization of blood vessels including the various chambers of the heart in the intact animal or human being has led to the accumulation of much interesting data and a different understanding of the patterns of blood flow, tensions, and tissue oxygen supply. . . . Methods for the assistance of artificial maintenance of ventilation have been devised which according to current standards improve the oxygenation of the blood, the elimination of carbon dioxide, and minimize the interference with circulation. . . . Because the anesthetist is intimately concerned with the problem of ventilation and is obligated to provide adequate oxygenation and carbon dioxide elimination, there is need for him to have a reasonably accurate assessment of the patient's ventilatory
capabilities prior to anesthesia and surgery. A number of tests have been devised to permit determination of these capabilities. . .

"In spite of the tremendous advances that have been made in measuring instruments, it appears at the moment that one of the most reliable assays of ventilatory capacity and reserve can be made by a careful history of the patient's response to exercise. . . . Bronchospirometry has promise in determining the relative effectiveness of the two lungs. . . . One of the most promising instruments for the study of ventilation is the pneumotachograph. . . . There is increasing realization that inadequate attention has been paid in the past to the accumulation of carbon dioxide during anesthesia. . . . The vast majority of contributions of the basic sciences in recent years have been the introduction of instruments which give a more precise interpretation of the changes that occur during anesthesia as a result of the abnormal state. This is important information and permits us to institute prophylactic measures, recognize undesirable changes earlier, and effect corrective therapy promptly. In addition, a better evaluation of the different anesthetic drugs and technics is possible and the opportunity is presented to improve the application of drugs and technics. However, a minimum of evidence has been introduced which permits a better insight into the understanding of the mechanism of anesthesia. Recently it has been determined that the rare and chemically inert gas, Xenon, is capable of producing anesthesia and analgesia in the presence of atmospheric tensions of oxygen. . . . Enumeration of some of the contributions made by the basic sciences during recent years serves only to give us a better understanding of the enormous amount of work yet to be done."


"For over half a century vast amounts of research have been channeled into the field of local anesthesia, with the prime purpose in mind, so far as dentistry is concerned, of making the dental operation as safe and as painless as possible. In spite of the advances and improvements made, improvements that have rendered the majority of dental procedures absolutely painless, there has been a certain reluctance on the part of a rather wide segment of the population to submit to local anesthesia. Much of this reluctance may be traced to the fact that the insertion of the needle, in itself, gives rise to pain. This, together with the psychologic apprehension attending the injection, is often sufficient reason to warrant the patient's seeking other forms of anesthesia, or of avoiding the dental operation altogether. Realizing this, there has been a distinct effort on the part of the profession to develop topical anesthetics, which when applied to the oral mucosa would eliminate the pain of needle insertion. Unfortunately there has not been developed a sufficiently satisfactory topical anesthetic which will render the injection absolutely painless. . . . "The work was begun with the prime purpose of finding a more satisfactory, more scientific, and more accurate method of evaluating topical anesthetic preparations in human subjects. . . . In order to utilize the response obtained from human beings and at the same time to eliminate as many extraneous variables as possible, an instrument was devised which reduced some of these factors. A weighting system was assigned to the instrument so that topical anesthetics might be mathematically evaluated for efficiency