tions altered by ether anesthesia are those caused by viruses which are destroyed in vitro by this anesthetic, and those infections not affected by ether anesthesia are caused by viruses which apparently are not destroyed by ether in vitro. Another striking difference between these two groups of viruses is their pathogenesis in the animal host; those which are inhibited in vivo by ether anesthesia tend to infect cells of the cortex, basal ganglia, and only occasionally the cervical region of the cord. On the other hand, those which are not inhibited in vivo by ether anesthesia tend to involve cells of the lower central nervous system and in the case of rabies, peripheral nerves. This difference is of considerable importance in view of the fact that anesthetics affect cells of the lower central nervous system only in very high concentrations. It is obvious from the complexity of the problem that no clear-cut statement can be made at this point as to the mechanism of the observed effect of ether anesthesia in reducing the mortality rate in certain of the experimental neurotropic virus infections. Important possibilities include a direct specific effect of diethyl ether upon the virus and a less direct effect of the anesthetic upon the virus through its alteration of the metabolism of the host cell. 34 references.

F. A. M.


The science and art of anesthesia is now over one hundred years old, but it is convenient and useful to compare the state of the specialty as it was after the war of 1914-18 with that at the present time. At the beginning of the period selected preoperative starvation and purging were common practice. Premedication was confined to subcutaneous morphine and atropine. The anaesthetics in common use were nitrous oxide, ether, chloroform and ethyl chloride. Oil-ether rectal anesthesia and intravenous ether in saline were occasionally used. Local anesthesia was used, especially on the continent. Spinal analgesia was confined to hypobaric solutions and little was known as to controllability.

In the quarter of a century since the end of the war (1914-18) the preparation of the patient has been directed toward putting him in the best possible condition. Intravenous fluids, blood transfusion, adequate provision of food and drink and minimum purging are among the preoperative preparations. Premedication is now calculated for each patient and may include basal narcosis. Anesthesia may be started with intravenous induction. New volatile anaesthetics include ethylene, propylene, acetylene and cyclopropane. Of these cyclopropane alone has gained a permanent place in England.

New ethers include one which has attained popularity, diviny ether. Trichlorethylenne is a new volatile agent now in general use. Curare, as used in anesthesia, "seems likely to mark the greatest advance in recent years." Apparatus for the administration of anaesthetics has developed considerably. The endotracheal technic has changed radically. The technic of controlled respiration is a recent development.

Local analgesia covers a wide field. New drugs for local analgesia which have attained popularity in Great Britain include nupercaine and amethocaine. Refrigeration of limbs has proved useful for amputations. Spinal analgesia has undergone many changes. Extradural spinal block has become more popular. Curare may replace high spinal analgesia in the future. The care of the patient's general con-
dition during operation is one of the duties of the anaesthetist. Intravenous fluids, newer analeptics, new methods of blood pressure determination and better records all aid in this objective. The ability of the anaesthetist is more important than new agents and technics.

F. A. M.


Many of the forerunners of the discovery of anaesthesia were British. October 16, 1946 is the centenary of the advent of surgical anaesthesia as a practical measure. The word anaesthesia was first used by Bailey in 1721. In 1829 it was used by Reid as synonymous with “loss of sensation.” The New English Dictionary (Oxford) gives the earliest use of the word “anaesthetic” as by J. Y. Simpson in 1847. Oliver Wendell Holmes wrote to Morton to suggest that the state should be called “anaesthesia,” from which the adjective would be “anaesthetic.” Knowledge of prehistoric attempts to produce anaesthesia is speculative. Early civilizations have left some evidence that methods for producing insensitivity to pain were being sought. Early pioneers of inhalation anaesthesia include Humphry Davy who suggested that nitrous oxide might “probably be used with advantage during surgical operations in which no great effusion of blood takes place.” His suggestion was not followed up. Henry Hild Hickman suggested the use of “suspended animation” in surgical operations. He experimented on animals, after inducing a “torpid state,” by allowing them to rebreathe their own exhaled air or by passing carbon dioxide into the bell-jars from which air was excluded. In the United States W. E. Clarke, Crawford W. Long, Horace Wells, W. T. G. Morton, and C. T. Jackson all contributed to the early use of anaesthetics for surgical operations. In England Robert Liston, John Snow, Joseph Clover, and James Young Simpson were pioneers in the development of anaesthesia. An exhibition at the Wellcome Historical Medical Museum, illustrating the whole history of anaesthesia, was opened on October 16, 1946. 33 references.

F. A. M.


The purpose of the investigation was to determine the changes in the water and chloride content of the skin and musculature during a period of chronic dehydration and recovery, and to compare these changes with those occurring in these organs with acute dehydration as a result of hemorrhage. Thirteen dogs were used in this study.

Dehydration by withholding food and water was followed by a greater loss of water from the skin than from the muscles of the body. Acute dehydration resulted in a similar but smaller loss of water from the skin. The chloride content of the skin increased from an average of 297 mg. sodium chloride per 100 cc. water to 440 mg. after chronic dehydration. The chloride content of the muscle deviated much less. In acute dehydration a slight increase in the chloride content of the skin occurred, while muscle tissue showed a decrease in chlorides. Acute hemorrhage in two dogs at the height of chronic dehydration produced slight deviation of the water content of the skin and muscle and a decreased chloride content of the muscle.

The results indicate that during chronic dehydration muscle tissue...