Soon after these reports the use of ether was introduced in all surgical services throughout France. Much zeal and ingenuity were shown by physicians and manufacturers in contriving appliances for use in anesthesia. The use of ether in midwifery was reported in February, 1847. French physiologists studied the problem of anesthesia and contributed greatly to the improvement of anesthetic methods. Gerdy, Longet, Flourens, Figuier, Soubeiran and other names appear in the early contributions. Early reports of fatalities following the use of chloroform caused it to be abandoned in favor of ether. Improvement in technics made the use of chloroform safer and it was again used by the pioneers in surgical anesthesia. 2 references.

F. A. M.


It is not known through what channels the news of the use of ether for surgical anesthesia first reached Germany. Only a short time elapsed between the first use of ether for surgery and its use in obstetrics. Heyfelder was probably the first surgeon in Germany to perform surgical operations on patients anesthetized by ether. Schuh, Behrend, Halla and Hammer each used ether within a few months of its introduction in the United States, and its use by other physicians spread rapidly. VonSiebold's presentation of a paper on etherization contributed much to the acceptance of anesthesia, and his paper must be regarded as one of the classics of medical literature. The term "general anesthesia" was never accepted in Germany. Physicians called the method "Narcose." Chloroform became more popular than ether and its popularity continued until early in the twentieth century. 2 references.


Many of the technics and agents which have aided in widening the field of usefulness of anesthetics were first introduced in Germany. O. Witzel of Dusseldorf first advocated the use of ether by the open drop method. The endotracheal technic of administering inhalation anesthetics was pioneered by the German surgeon Franz Kühn of Cassel. He described most of the basic principles of endotracheal anesthesia as it is used today. Alfred Kir- stein of Berlin invented a forerunner of the direct-vision laryngoscope. Gustav Killian of Freiburg modified Kirstein's laryngoscope and made it possible to pass a tube more easily into the trachea.

German investigators were pioneers in the development of local, spinal and regional anesthesia. In 1884, Carl Koller demonstrated the use of cocaine for local anesthesia of the eye and Jelinek of Vienna used it for anesthesia of the nose and throat. Carl Ludwig Schleich, in 1892, introduced a new technic of local anesthesia in an effort to increase the safety of injected cocaine by injecting low concentrations of local anesthetic drugs. Heinrich Braun, an early worker in the field of local anesthesia, suggested the use of adrenaline in local anesthetic solutions to decrease the rate of absorption of the drug. The German chemist, Alfred Einhorn synthesized novocaine which proved to have a low degree of toxicity and his became the standard by which other local anesthetics are evaluated.

In 1908 August Bier attempted to produce anesthesia by the intravenous infusion of procaine. In 1908 he combined the technics of Corning and Quincke to demonstrate the feasibility of producing surgical anesthesia by the
injection of anesthetic drugs into the spinal canal. Dönitz and Klapp each studied the use of vasoconstrictors intradurally.

In 1905, Hugo Sellheim of Leipzig first used paravertebral blocks. Kappis, in 1911 used the posterior approach to produce splanchnic block and in 1919, Braun advocated the anterior approach. In 1909 Läwen perfected a technic of injecting branches of the sacral nerves through the posterior sacral foramina.

Dresser, in 1899, introduced hedonal. Ludwig Burkhardt reported his experimentation with intravenous ether and chloroform in 1909. He also experimented with other drugs for intravenous anesthesia. The first barbiturate, veronal, was synthesized in 1902 by Fischer and von Mering. Bogendorfer reported the intravenous use of Dial in 1924. Other barbiturates were reported. Weese and Scharpff, in 1932, introduced evipan which was immediately successful as an intravenous anesthetic. "Twilight Sleep" was introduced in Germany by von Steinbüchel in 1902. 57 references.

F. A. M.


Before the telegraph had revolutionized international communication the diffusion of knowledge was slow. It was not until February, 1847 that the first reports of the use of ether for surgical anesthesia were read to the members of the Swedish Medical Society. Doctor C. J. Ekström was asked by the Medical Society to make experiments with ether. His report was read in March. Doctor E. G. Polmgren devised an apparatus to be used for ether administration. Doctors O. A. Swalin, V. Lundberg and others used ether within the first weeks after the reports of its use reached Sweden. Ether, and later, chloroform were used for obstetric practice soon after they were accepted for surgical anesthesia. 19 references.

F. A. M.


After hearing of Morton's demonstration of the anesthetic qualities of ether, Spanish physicians interested themselves promptly in the discovery. Diego de Argumosa y Obregon used ether for various surgical anesthesias beginning in February, 1847. Benavente, Ruiz Gimenez, and Ulpiano Fernandez inhaled ether vapor in their studies. Basilio San Martin was the first to observe and to point out the importance of antecedent alcoholism for the disturbances supervening during general anesthesia. Ether was used by Antonio Saez who administered a drachm of ether and an ounce of distilled water by enema before the patient was given inhalation ether. Vincente Guarnierio used chloroform eighteen days after Simpson published his discovery. In 1888, Professor Morales Perez began to use warm ether for anesthesia. He reported 4917 operations using this method, without having observed any respiratory complications. In 1896, Suarez de Mendoza used and recommended the use of a mixture of chloroform and oxygen, which he called the "Spanish method." 3 references.

F. A. M.


In March, 1847, Adolphe de Mareille de Vitry, junior, a dentist in Lisbon advertised that he would use ether in