lence. . . . The time element is . . . all-important in making this decision. It should be done, certainly, within five minutes or will probably ultimately fail, whatever its temporary effect. . . . During respiratory arrest, the last thought and not the first should be the use of analeptics. . . . The effect for good of these drugs on the heart is seriously questioned in reported experimental and practical experience."

J. C. M. C.

DEPREE, J. F.: *Morphine-scopolamine Anesthesia—in First Aid Treatment of the Injured.* Indust. Med. **9**: 554–556 (Nov.) 1940.

"The use of morphine-scopolamine anesthesia has been described since 1904. It was popular in obstetric practice and was commonly referred to as 'twilight sleep.' In 1918 the use of this anesthesia was introduced at the Washington Boulevard Hospital by Dr. B. F. Lounsbury, former Chief Surgeon of the Milwaukee Railroad. It was found to be very satisfactory and was supplemented by nitrous oxide or ether when necessary; and it was used in almost all major and minor surgery including the emergency room in handling those traumatic cases which required general anesthesia. Its use has been continued up to the present time and covers approximately 16,000 cases. . . .

"Morphine-scopolamine has been given to patients of both sexes, and from the age of 12 years up. In the first aid room we are using it in treating those cases requiring an anesthetic such as fractures, dislocations, wounds requiring special care, and burns. When any person with such injuries is brought to the first aid room a careful examination is made to determine the extent of injury, identification for the record which is to be kept is made, and if the patient's general condition requires immediate treatment a hypodermic injection of morphine-scopolamine is given. The usual initial injection consists of morphine sulphate grain $\frac{1}{4}$, and scopolamine hydrobromide grain $\frac{1}{50}$. In only the extremely young or aged is the dose smaller and then the dose is decreased to morphine grain $\frac{1}{6}$ and scopolamine grain $\frac{1}{100}$. During the subsequent thirty to forty minutes the patient is observed closely and if time is an important factor, treatment is started using nitrous oxide and oxygen or ether or both. . . .

"In our experience most working men between the ages of 18 to 60 and weighing 150 to 200 pounds will require two injections of morphine grain $\frac{1}{4}$ and scopolamine grain $\frac{1}{50}$ and a third of grain $\frac{1}{6}$ and grain $\frac{1}{100}$ respectively. Some men tolerate three large injections. Most women from 18 to 60 and weighing 120 to 150 pounds require one injection of morphine grain $\frac{1}{4}$ and scopolamine grain $\frac{1}{50}$ and two injections of grain $\frac{1}{6}$ and grain $\frac{1}{100}$ respectively of each drug. Larger women require the same amounts as an average man. The injections are given 30 to 40 minutes apart and the patient is observed constantly during this time, a close watch being maintained on the pulse rate and the respiratory rate. The former is seldom affected, but there is usually a decreased respiratory rate and if it is down to 10 to 12 per minute no additional morphine-scopolamine is given. . . . In most cases no additional anesthetic is required, and the patient remains sufficiently narcotized for three to six hours to enable the surgeon to carry out the necessary procedures." Bibliography—4 references.

J. C. M. C.

SLAUGHTER, DONALD; PARSONS, J. C., and MUNAL, H. D.: *New Clinical Aspects of the Analgesic Action of Morphine.* J. A. M. A. **115**: 2058–2060 (Dec. 14) 1940.

"Morphine is considered the best pain-relieving drug which the clini-

cian has at his disposal, yet there are elements of tolerance, addiction and gastrointestinal disadvantages to its use. . . . Much work has been done on producing a chemical which might serve as a substitute for morphine. The most notable is, perhaps, dilaudid hydrochloride (dihydromorphinone hydrochloride). It is recognized that, while dilaudid hydrochloride may have certain advantages over morphine, it does not entirely fulfil the requirements for a perfect substitute. . . . The present report considers the use of prostigmine methylsulfate in combination with morphine in a series of approximately 100 cases. . . . The patients in this study roughly fall into six groups: (1) trauma, (2) preoperative sedation, (3) postoperative treatment, (4) coronary occlusion, (5) miscellaneous cases and (6) addiction. . . .

"This study indicates that one-half the accepted dose of morphine when combined with prostigmine methylsulfate in doses of 0.5 mg. gives as good relief as the larger dose of morphine. There were no side reactions noted. . . . In all but two cases the combination of prostigmine methylsulfate and 8 mg. of morphine relieved pain. Twice in this series of 100 cases it was necessary to give 16 mg. of morphine instead of the smaller dose; one was a case of extensive gunshot wounds and one of compound fracture. . . . It is felt that perhaps shock is a contraindication to the use of prostigmine methylsulfate with morphine. We feel that a combination of 1 cc. of a 1:2,000 solution of prostigmine methylsulfate plus 8 mg. of morphine is an efficient pain reliever. Further, it is an excellent preoperative sedative and postoperative analgesic. When used before operation, it definitely minimizes ileus, distention and anuria. . . . The one case of addiction treated with prostigmine methylsulfate lends encouragement to the use of this drug in similar cases. . . . This work further substantiates the cholinergic action of morphine with regard to its effects on pain." Bibliography—13 references.

J. C. M. C.

LUNDY, J. S.: *The Value of the Fundamental Sciences in the Establishment of Anesthesiology.* Science **92**: 388-392 (Nov. 1) 1940.

"For a great many years anesthesia was largely an art, but now it is developing also into a science and into a major specialty of medicine. . . . In the effort to outline the development of the scientific side of anesthesiology, it is worth while to point out some of the incidents that illustrate the interrelation of the anesthetist and the scientist. The relationship of art and science in the development of a specialty was well stated by Jevons who said, 'Science teaches us to know and an art to do. . . . In the last twenty years opportunities have been made available to certain physicians throughout the United States and Canada, who are interested in the administration of anesthetic agents, to put into practice ideas that have come to them both in regard to clinical practice and to research. These individuals have become known, and, as a result, drugs have been presented to them for investigation. When a new method of anesthesia has been devised these investigators usually have had a part in furthering its clinical application. Many a scientist has advised and cooperated with them in institutions of higher learning and they also have cooperated with scientists who are engaged in the development of new commercial products that are useful to the anesthetist. . . .

"The science of anatomy is of fundamental importance to all branches of medicine, including that which includes the anesthetist. . . . An anatomist's contribution that at first would seem to have to do only with his own science is