observed in the former addicts, but this group has been shown to react abnormally to morphine, and even here the effect is not great enough to be of practical importance. 4 references.

J. C. M. C.

FAGLER, J.: *The Action of Curare on the Respiratory Center.* J. Physiol. 100: 417–422 (March) 1942.

Using 1 per cent solution of Merck's Curare in intravenous doses of 2–5 cc. in dogs (10 kg.) receiving oxygen, anesthetized with morphine and chloralose, it was determined that,

1. Curare produces a short period of excitation followed by a decrease in respiratory frequency and amplitude. The respiratory inhibition is progressive, and eventually results in cessation of respiratory movements.
2. During the period of respiratory inhibition sensory stimuli (sciatic-vagal) become completely ineffective.
3. It was also found that Curare produces an increase of summation time and of the chronaxie and rhasbase voltage for stimulation of the central ends of the sciatic and vagal nerves.
4. The slowing of respiratory rhythm, together with the progressive depression of the responses to reflex stimuli which either excite or inhibit the respiratory center before full development of its peripheral action.

E. A. R.

EDITORIAL: *Anaesthesia for the Belly Wound.* Lancet 2: 283–285 (Sept. 5) 1942.

"From the anaesthetist's point of view total war has divided the wounded into two classes—those in the cities where facilities for modern anaesthesia are available, and those on the battlefield where apparatus is necessarily minimal. . . . Lahey and many surgeons in Britain use light or heavy spinal anaesthesia for their abdominal operations. . . . Few in this country will, however, countenance this in the presence of shock, and Gordon-Taylor goes as far as to say: 'Spinal anaesthesia spells certain euthanasia for the shocked abdomen.' . . .

"To delay anaesthesia in the abdominal wound in the hope that shock will improve with time is a form of wishful thinking that still needs checking. The vital centres are damaged early, and unless the bleeding is stopped early resuscitation measures will not catch up. That haemorrhage is one of the most important factors in the production of abdominal wound shock is shown by comparison with other abdominal injuries. The patient with a stab wound, with severed bowel only, usually looks quite fit; the man with a ruptured bowel, with no penetration of the abdominal wall and no vessel damage, shows for several hours little alteration in pulse or blood pressure—as Massie and Estes have pointed out, there is a striking absence of symptoms indicating mortal injury for two hours. The importance of early operation for the wounded abdomen has also been urged by Russian surgeons. Following the work of Vishnevskiy they maintain that with local anaesthesia operation can be started even while the patient is in a state of shock. . . .

"Almost every general anaesthetic carries some danger or disadvantage, but consideration of the psychological make-up of the shocked patient is an important part of treatment. The average Englishman prefers, and as a rule demands, to be unconscious for what is otherwise an ordeal to him and even to the surgeon. The great advantage of the local anaesthetic is that it permits of the lightest possible plane of narcosis; this is especially important on the battlefield where orderlies, and even the padre, have had to be coöpted.

In the city battle zone, cyclopropane, with which oxygen percentages of 75–90% can be given, is widely preferred as the complementary anaesthetic; it is now readily obtainable but its administration is probably best left to the skilled anaesthetist. Nitrous oxide with oxygen is usually quoted as the safest anaesthetic. . . . But it is almost impossible to maintain unconsciousness with it without suboxygenating the patient, and in shock maintained anoxia is particularly dangerous. Ether has shown the greatest safety in the greatest number of hands providing it is used for narcosis and not for relaxation. With the abdominal wall relaxed by local injection, the intravenous barbiturates have much in their favour and anaesthesia may well be started by injecting one of these into the rubber tube delivering a blood transfusion. . . . Woods has shown that, in vitro, procaine is a potent inhibitor of sulphonamide activity. The rapid absorption of the local anaesthetic, the fact that it is really placed in the abdominal or mesentery layer and not in the cavity itself probably discounts any such action, but no experimental work on this aspect has yet been recorded. Some belly wounds by the nature of the injury must be mortal, but Gordon-Taylor has reviewed a series of over 600 cases that reached the operating-table, and half of these survived. That makes abdominal surgery worth while." 14 references.

J. C. M. C.

ROMBERGER, F. T.: *What is Good Anesthesia? (Comment Based on Twenty-five Thousand Personally Administered Anesthesias.)* J. Indiana M. A. **35**: 613–619 (Nov.) 1942.

"On April 17, 1942, I administered my twenty-five thousandth anesthetic, personally, with my own hands. . . . It is my matured opinion that there is no single answer to the question of good anesthesia in all instances and in all communities. . . . Very many drugs and agents, perhaps even hundreds of them, possess narcotic, sleep-producing, and/or anesthetic properties of varying degree and potential. However, measured by the yardstick of efficacy, in reality the number is quite low. By 'yardstick of efficacy' I mean: Can the drug or agent, alone, unsupported by preliminary or basal narcotics and unassisted or unsynergized or unpotentiated by 'something added' during the anesthesia, produce deep and musculature relaxing anesthesia for difficult abdominal surgery in the robust patient? That is the true test for any anesthetic agent. Extended experience leads to the conclusion that, . . . our good general anesthetics are very few: ether and chloroform, yes; cyclopropane and intravenous barbiturates, perhaps. Local, regional, and spinal, yes, when used within their limitations. I do not decry the use of combined or synergistic anesthesia or the employment of those partial anesthetic agents of lesser potential; in fact I administer combinations of two, three, or even more agents many, many more times than single drugs during the course of an average general anesthesia. . . . Good anesthesia is contingent upon: (1) a thorough knowledge of and experience in all the reasonably applicable anesthetic agents and methods by the anesthetist, and (2) applying this knowledge and experience, (a) in accordance with the particular wish and sanction of the surgeon, (b) for the particular surgical condition presented, and (c) in the particular community under consideration. This is inescapable."

J. C. M. C.

ROBB, DOUGLAS: *A Note on Drugs for Spinal Anesthesia in Wartime in New Zealand.* New Zealand M. J. **41**: 176–177 (Aug.) 1942.

"The failure of supplies of percaine for spinal anesthesia has obliged many