

promise with the purity of the ether or the safety of the patient. Bibliography—14 references.

A. S.

E. V. ALLEN AND E. B. TUOHY. *Relief of Somatic Pain by Local Anesthetization*. Proc. Staff Meet., Mayo Clin. 15: 58-60 (January 24), 1940.

"A common and distressing complaint by patients is pain affecting various somatic structures such as those of the abdomen, chest, cervical and occipital regions and of the lumbosacral regions. . . . It is not the purpose of this presentation to discuss mechanisms of somatic pains or the frequently complicated genesis of them but to reemphasize observations by other that such pains may be relieved frequently by local anesthetization. Naturally, such injections are not to be given indiscriminately and not until extensive attempts have been made to find a cause for the pain for which there may be more specific therapeutic measures. Previous investigators have emphasized that painful shoulder, painful knee, talalgia, sacro-iliac pain, herpes zoster, neuralgia, arthritis of the spinal column, sciatica, myositis, fibrositis and psychalgia may be relieved by local anesthetization of painful regions, by paravertebral nerve block or by injection of an anesthetic agent into a nerve. A recent report states that ninety-eight of 134 patients (73.1 per cent.) were completely or largely relieved by such procedures as brachial plexus block, injection into bursae, paravertebral block, injection of sciatic nerve, local infiltration or by injection into or around joints. Relief may be transient, in which case injections are repeated at intervals of three to twenty-one days as often as ten or twelve times. When injections are repeated there is evidence of prolonged relief. In many instances an oily solution of the anesthetic, to prolong action, is more efficacious than

an aqueous solution. Pleural pain may be relieved by deep injection of procaine. It is easy to understand why local anesthetization of a painful area produces temporary relief from pain. It is difficult to understand why temporary anesthetization may produce permanent relief from pain. . . .

"We wish to emphasize that local anesthetization is no cure-all for somatic pain. The procedure should never be substituted for an extensive attempt to discover the cause of pain and never be performed unless such an attempt has been made. When used cautiously, local anesthetization has been, in our experience, a useful therapeutic measure." Bibliography—3 references.

J. C. M. C.

G. H. A. CLOWES, A. K. KELTCH AND M. E. KRAHL. *Extracellular and Intracellular Hydrogen Ion Concentration in Relation to Anesthetic Effects of Barbituric Acid Derivatives*. J. Biol. Chem. 68: 312-329 (March), 1940.

For each of two representative barbituric acids investigated it is found that the extracellular concentration of undissociated molecules required to produce a 50 per cent. reduction in the rate of cell division of fertilized *Arbacia* eggs is not affected by a decrease in the intracellular pH. For each of three representative barbituric acids investigated it is found that the extracellular concentration of undissociated molecules required to produce a 50 per cent. reduction in the rate of cell division is also not affected by an increase in the intracellular pH. These observations indicate that it is the barbituric acid molecule and not the barbiturate anion which is active inside the cell in producing the anesthetic effect; thus, the barbiturates are to be classified with non-ionizable anesthetics like the ethers