

ing with the untoward effects following nitrous oxide anesthesia. Some hold that anoxemia or tissue anoxia is responsible; others maintain there is a toxic action of nitrous oxide itself.

There have been certain errors present in the clinical use of this drug, and these errors have come to be looked upon as truths, through long usage, particularly by those with little or no clinical experience. Unfortunately, some recognized authorities have set forth the dictum that anoxemia during the administration of nitrous oxide is a normal and harmless condition. Undoubtedly a large amount of damage has been done by administering nitrous oxide without sufficient oxygen. This is because wrong methods have been used, and it should be recognized that the damage is due to anoxemia.

It has been accepted by clinical anesthesiologists that nitrous oxide is neither toxic nor is it irritating to the tissue. There seems to be no evidence that patients have suffered ill effects when nitrous oxide has been given in the presence of sufficient oxygen. Nitrous oxide is a very weak anesthetic, and although it will produce sleep in most patients, it does not possess the property of producing muscular relaxation. Adjuncts which will produce the necessary relaxation fall under four headings: (1) premedication, (2) block, (3) addition of another general agent, and (4) asphyxia. Asphyxia is not a part of normal anesthesia.

It can not be too strongly stated that asphyxia should not be a normal accompaniment of nitrous oxide or any other anesthetic agent.

If by the term "surgical anesthesia" we mean a state in which muscular relaxation is present with adequate oxygen concentration, there is no such thing as surgical anesthesia produced by nitrous oxide and oxygen.

It is true that nitrous oxide properly given has very definite limitations as

an anesthetic agent. If muscular relaxation is present with nitrous oxide, there must be more or less anoxemia. Therefore, any report of a laparotomy done under nitrous oxide anesthesia is also a report of a case of anoxemia.

If the limitations of nitrous oxide are understood and too much is not expected, it has a proper place in the armamentarium of the anesthesiologist.

If nitrous oxide is given with sufficient oxygen, it can be given for any length of time and to patients of any age.

The abandonment of secondary saturation technique, the promiscuous use of nitrous oxide by unskilled attendants and others in dental offices, and the "pushing" of nitrous oxide in surgical cases will soon prove that asphyxia, not anesthesia with nitrous oxide, is responsible for the untoward effects which recently have been receiving attention.

B. B. S.

BUREAU OF LEGAL MEDICINE AND LEGISLATION, AMERICAN MEDICAL ASSOCIATION: *Regulation of the sale of barbiturates by statute*. J. A. M. A. **114**: 2029-2036 (May 18) 1940.

"Twenty-seven states have enacted laws, as of May 1, 1940, regulating the sale of barbiturates. In all but one of these states, retail sales of such drugs to consumers may be made only on prescription. . . . The laws that have been enacted follow no well defined pattern with respect either to the framework of the law or to the drugs included. . . . In practically all of the states compounds, derivatives and preparations of the included drugs are covered. . . .

"In some of the laws reference will be found to a requirement imposing on pharmacists a duty to retain prescriptions for barbiturates or other included drugs in their files for a definite period of time. The absence of such a refer-

ence in other laws does not necessarily mean that there is no such requirement in those states, because there may be a general law imposing the requirement with respect to all prescriptions."

J. C. M. C.

EDITORIAL: *Barbital and its derivatives.*

J. A. M. A. 114: 2020 (May 18) 1940.

"Ever since urea was prepared synthetically by Wöhler in 1828 its derivatives have occupied an important place in medicine and in research. . . .

"In a report previously published in *The Journal* . . . it was shown that 'the evils of these drugs [the barbiturates] include habit formations, toxic cumulative action, their substitution for alcoholic beverages for drunken episodes, their use for successful as well as unsuccessful suicidal attempts, their improper use being a recognized causative factor in many motor accidents and their improper use being a recognized etiologic factor in some criminal assaults.' . . .

"Restrictions enforced by law have become increasingly necessary with the education of the public to the possibilities that lie in the ingestion of the malonylurea derivatives. . . . More rigid enforcement of restrictions on the prescribing of these potentially dangerous drugs has the whole-hearted approval of the Council and of *The Journal*."

J. C. M. C.

HAMBOURGER, W. E.: *The promiscuous use of the barbiturates.* J. A. M. A. 114: 2015-2019 (May 18) 1940.

"In a previous communication . . . a survey was made of coroners' records of suicidal deaths due to barbiturates. The present report deals with the involvement of these drugs in cases of poisoning received at hospitals during the decade 1928-1937. The data were obtained from fifteen hospitals in reply to a questionnaire. Additional data

were added from the medical literature. . . . The statistics available for study represent more than one and one-fourth million hospital admissions for the decade 1928-1937. . . .

"One out of every 1,900 admissions was due to acute barbiturate intoxication. Barbiturates were responsible for one-seventh of the acute poisonings due to all drugs except alcohol and carbon monoxide. The fatality rate in the cases of acute barbiturate poisoning was 7.3 per cent. As each new barbiturate has been introduced clinically and has become publicized there has been a noticeable trend toward its use in poisoning cases. . . . Hypersusceptibility to therapeutic doses of a barbiturate was charged in thirteen cases admitted to ten of the hospitals, about one case for every 90,000 admissions. Addiction to barbiturates was the reason for admitting eighty-five patients out of the total of 1¼ millions admitted for all causes, about one barbiturate addict in every 15,000 admissions. Barbiturates accounted for more than 10 per cent. of all addiction cases, excluding chronic alcoholism, admitted to the thirteen hospitals. Two thirds of the barbiturate addicts who gave information claimed that they became familiar with the drug through a physician. Nearly a third of the addicts for whom the information was recorded developed craving when the barbiturate was withheld. None showed any serious withdrawal symptoms. . . . Despite the probable involvement of barbiturates in automobile accidents and criminal assaults, no data concerning such crimes are available." Bibliography—17 references.

J. C. M. C.

HADLER, A. J.: *Granulocytopenia following barbiturate therapy.* New England J. Med. 222: 755-759 (May 2) 1940.

"Few cases of granulocytopenia due