

EDITORIALS

The Anesthesia Memorial Foundation

THE first six months of 1956 was devastating to the ranks of prominent American anesthesiologists; R. Charles Adams, Rolland Whitacre, Brian C. Sword, Robert B. Hammond, Henry S. Ruth, and Arthur E. Guedel succumbed. These men had all made significant contributions to their chosen specialty. Eulogies and flowers seemed so pitifully inadequate as a gesture of sympathy to their families or as a memorial for their outstanding work. The idea of a more fitting expression of sorrow and acknowledgement of respect that could be perpetuated to benefit coming generations of students of anesthesiology therefore struck a chord of acclaim. The Anesthesia Memorial Foundation was incorporated in September, 1956, for the purpose, "To loan or give money to deserving persons to assist them in becoming specialists in anesthesia or for research or study in the field of anesthesia or related fields. . . ."

Donations given in memory of deceased anesthesiologists were augmented by funds from private and industrial sources intrigued with the purposes of the Foundation. By 1959, sufficient gifts have been received to enable 17

residents needing financial aid to borrow a total of \$16,600.00. Yet these 17 are a small portion of those who have applied for loans. Until a greater reserve is accumulated by the Foundation, all requests cannot be granted.

The Anesthesia Memorial Foundation provides a channel to establish a tangible and lasting expression of affection and respect to departed colleagues. American anesthesiologists would do well to lend support to this worthy cause by making contributions (which are tax deductible) and by pointing out the Foundation's objectives to friends and industry.

In addition to its loan activities to anesthesiologists, the Foundation also acts as a screening committee for the American Society of Anesthesiologists to select annually for the Mead Johnson Awards three promising students who need help, have good records and a promising future, and who must be kept from terminating their training because of insufficient funds.

Information pertaining to the Foundation is outlined on advertising pages 62 and 63 of this issue of the JOURNAL.

Anesthesiologists—Today and Tomorrow

THE use of chemical agents to abolish pain, to induce muscular relaxation, and to protect body economy during surgical assault began a little more than a century ago. The emergence of a physician with specialized knowledge of these agents, restricting his practice to this art, occurred only about twenty years ago. More recently, the rapid advances made by all branches of medicine in World War II carried along the infant specialty of anesthesiology to its present state. This brief discussion reviews the evolution and present status of anesthesiology, and raises questions regarding its future.

There was a 600-year lag between the discovery of sulphurous ether by Lully in the thirteenth century and its clinical use in 1842 by Crawford Long. There was a seventy year lag between Joseph Priestley's discovery of

nitrous oxide in 1772 and demonstration of its anesthetic usefulness by Horace Wells in 1845, despite Sir Humphrey Davy's observations in 1800, "As nitrous oxide in its extensive operation appears capable of destroying physical pain, it may probably be used with advantage during surgical operations in which no great effusion of blood takes place."¹ It is interesting that dentists played a leading role in introducing these agents into clinical use. The term "anesthesia" is attributed to Oliver Wendell Holmes. In a letter to Morton he wrote, "Dr. Morton, I have given consideration to this agent which you have used in Boston and have selected for it a generic term, for I believe it will be on the tongue of every person who is to live anywhere on this planet. I have called it "anaesthesia"—want of feeling."

Anesthesia is one of the greatest contribu-

tions made by American Medicine. Combined with antiseptics, it set the stage during the last half of the nineteenth century for the development of modern surgery and obstetrics. At the beginning of the twentieth century, all branches of science were on the move. The organic chemist and the bacteriologist had found permanent places. The physiologist and pathologist were concerning themselves more with the mechanisms of disease and less with their simple description. In this flourishing intellectual climate, there appeared individuals willing to undertake some of the problems of anesthesia. By 1915, spinal, endotracheal, and rectal anesthesia were well developed. By this time also, a number of good "gas" machines were available. Just as the widespread use of ether was dependent upon its successful manufacture by Squibb, and nitrous oxide by the S. S. White Laboratories, so were other advances to be dependent upon progress in the synthesis of new compounds. The barbituric acid derivatives appeared in the 1920's but thiopental, the most widely used, did not appear until 1934. The introduction of curare in 1942 and of halothane in 1956 represents a continuing development of anesthetic agents.

At the beginning of the twentieth century, there was a dearth of literature on anesthesia. Snow's book in 1858,² Hewitt's books in 1888 and 1893,³ and Heineck's book in 1901⁴ practically comprised the literature. In 1915 and 1916, McMechan published the *American Yearbook of Anesthesia and Analgesia*.⁵ Only these volumes appeared. Parenthetically, one wonders why a Yearbook of Anesthesiology does not appear again. A quarterly supplement on anesthesia in the *American Journal of Surgery* was published for about 10 years beginning in 1916. In 1922, publication of *Current Researches in Anesthesia and Analgesia* began. It was not until 1940 that the journal ANESTHESIOLOGY commenced. This slow development of the literature of anesthesiology reflects the slow appearance of the anesthesiologist in American Medicine. Before the special journals in anesthesiology appeared, and even now, the greatest part of the literature pertaining to anesthesia has been published in the journals of the pharmacologists, physiologists, and chemists who have studied these agents.

There was early recognition of the need to

know more about the physiology of the anesthetized human being, and Gwathmey published in 1914⁶ the first book on the physiology of anesthesia. Awareness of these problems is revealed in the 1915 *Yearbook of Anesthesia and Analgesia*. Some of the contributors and their topics were: Frank Mann on "The Peripheral Origin of Shock," Yandell Henderson on "Some Consideration of Respiration in Relation to Apnea, Anoxemia, Acapnia, and Anesthesia," and James Hogan, "Kidney Function and Anesthesia." A review of recent journals will disclose similar topics. New knowledge regarding all fields of interest to the anesthesiologist is appearing at a steadily increasing rate.

Now, let us turn to the appearance of the anesthesiologist on the American scene. For many years, until well after World War I, the surgeon dominated the operating room and, in fact, the hospital. His dominance did little to allow the development of anesthesiology, and it is questionable how much encouragement he offered. Apparently, he was content so long as his patient did not yell in pain, did not die from the anesthetic, and did not have a too difficult postoperative course. He expected the anesthetist to precede him to the operating room, have the patient asleep when he approached, and leave the rest to the Lord and himself. This is perhaps exaggerated, but it strikes pretty close to the truth. Most of the individuals concerned with anesthesia at this time probably are best described as anesthetists. By 1932, however, there emerged a new type of physician interested not only in operating room anesthesia, but also in the preoperative preparation of the patient, the application of certain anesthetic or analgesic drugs to specific disease entities, the control of pain, and the improvement of immediate postoperative care. Such a general description of the anesthesiologist was presented by Lundy in 1932,⁷ but this enlightened attitude was not universal. In the mid-thirties there were few if any lectures in anesthesiology in the medical schools. University hospitals were content with the old anesthetist system. As a result of the effort of a few dedicated individuals, the American Board of Anesthesiology was established in 1937. Standards for the training of anesthesiologists were promulgated and good

training programs appeared. The advances of World War II in all fields of medicine accelerated the development of the specialty of anesthesiology. In 1947 there were 429 residency training spaces in 131 hospitals. Ten years later, there were 1,272 spaces in 213 hospitals. As of March 1947, or in the first ten years of the Anesthesiology Board, 316 physicians had been certified. By 1956, 1,503 physicians had been certified.

Growth in numbers does not present an entire story. Examine this brief passage which appeared in the 1915 *Yearbook*:⁵

The art of anesthesia implies an intimate knowledge of general medicine, pathology, surgery, therapeutics, psychology and special branches. Those who are not familiar with these subjects cannot understand the language of anesthesia.

For example, how can a lay person intelligently form an opinion upon such vital matters as acidosis, toxemia, carbon dioxide, stimulation and depression? How can he unravel and relieve the untoward symptoms which might arise in a case complicated by respiratory obstruction, morphine depression and reflex inhibition? Aside from the timidity of intelligent people toward the taking of an anesthetic, the surgeon can ill afford to let the public know that he is willing to risk the patient's life at the hands of an anesthetist who is not a medical man. Does not this very evident lack of concern imply to the mind of the thoughtful patient a greater lack of care which may include the operative procedure?

A layman who administers an anesthetic is like a blind guide who is led by the patient, instead of leading him. Unable to properly appreciate or anticipate the stages of an operation, he cannot judge the indications for artificial stimulation. Those who relegate anesthesia to the layman, place the responsibility of the outcome on their own shoulders. [p. 170].

In 1949, nearly 35 years later, one finds the following statement by Metz.⁸

As I look back to the day when the general practitioner, the misfit or the incompetent physician were the ones who usually gave the anesthetics, I can readily understand why the equality of the anesthesiologist in the family of internist, surgeon and obstetrician has been so long delayed. Too few physicians were really interested in anesthesia as a specialty, persistently sought to keep abreast of progress in the field and constantly strove to keep anesthesia on a par with the other specialties in medicine. This has been an unending battle, principally because anesthesia was not attractive either financially or in terms of prestige to the younger physicians. Hence, the number of anesthesiologists fell far below that required to meet the demands of surgical practice. As a consequence, technicians were trained in anesthesiol-

ogy and in many instances were exploited by the hospitals and in some instances, I am sorry to say, by the anesthesiologists themselves. The specialty will take its rightful place only when there are enough trained anesthesiologists to meet the demands of surgical practice.

It is obvious by comparison of these statements that in 35 years there was little change on the part of the anesthesiologist in his demands on his colleagues and on the hospitals. A close scrutiny of events in the 35-year interval indicates very little progress generally, except that which was accomplished by a few individuals in a few enlightened institutions. Has there been a development in the specialty which has *earned* the respect of colleagues or has this been rammed down their throats? Has the specialty been realistic in its evaluation of the needs of the patients, hospitals, and confreres?

To answer these questions, we must evaluate the present situation factually. There are in the United States two groups concerned with anesthesia. One group we choose to call "anesthetists." This group includes the nurse-anesthetist and the untrained physician. This is a large group. The second group is the anesthesiologists. These meet the definition hinted at by Lundy and ultimately defined by him as being an individual who has pursued special studies of the preparation of patients and their care during and after the administration of an anesthetic.

Let us first examine the anesthetists. As one can see from the statements quoted above, this group has been with us a very long time. Here we find physicians who have had little or no special training. Some administer anesthetics because there is no one else available; some as a favor to a friend, colleague, or partner; and some as a means of eking out a few extra dollars. Some undertake great risks with aplomb and little concern for their patients. Some are conscientious physicians forced by circumstances, such as emergencies in small communities, to do the best they can. The possession of an M.D. degree no more entitles a physician to administer an anesthetic in 1959 than it did in 1915, when there were few other persons available. There are those who would rather be operated upon by a physician not trained in surgery than to have the anesthetic administered by a physician not trained in

anesthesia. It is amazing that there are hospitals of great size in which there are anesthesiologists as heads of departments of anesthesiology who allow the administration of anesthetics by those who have had little training in anesthesia.

Let us now examine group two, the anesthesiologists. Anesthesiologists may be divided into two principal categories: the clinical and the teaching-investigative. The clinical anesthesiologist, in general, is the physician in practice. Frequently, he is vociferous in his defense of the free enterprise system, rises up in righteous indignation at the mention of "third party medicine," and is struggling to maintain his status in the medical community. He is beset by numerous problems imposed by hospitals and, sometimes deservedly, by unsympathetic medical colleagues. If he is fortunate, he may participate in teaching programs and perhaps in investigative work.

The clinical anesthesiologist is quite an individual. He must be skilled in the evaluation not only of the cardiac, respiratory, and urinary systems, but of the whole patient. He must have an unusually good background of knowledge of nonsurgical diseases. He must have an intimate knowledge of surgical and obstetrical techniques. He must have a thorough knowledge of physiology and pathology. His pharmacological knowledge must encompass many drugs and gases. He must be mechanically minded. In the coming era of group practice, he should become a key group member as he will work with all group members, pediatrician, internist, surgeon, and obstetrician.

There is no necessity to dwell at length on the investigative-teaching anesthesiologist. All of the duties outlined above are his, but added to these are those which have to do with teaching or training young physicians. If he is to do investigative work, then he should have had special training for this. As a matter of fact,

possibly there should be two types of residency training programs. One to train clinical anesthesiologists and a second to train the investigator-teacher. The latter should be a graduate school program leading to a graduate degree. It should be comparable to the programs of graduate students in other sciences.

The time has come for anesthesiologists to step out into the positions they deserve. Knowledge applicable to anesthesiology is accumulating at an amazing rate. Postgraduate courses are but one means of accumulating, analyzing, and disseminating this new knowledge. Its application will depend upon what kind of anesthesiologists we have and we train. Anesthesiologists must remember that with knowledge and seniority in the medical community, there come very real responsibilities. These must be met, accepted, and discharged with dignity, dispatch, courage, and at least a soupçon of unselfishness.

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Audio Education

UTTERED sound is a basic means of communication. The newborn inherits this capacity and exercises it with his first few breaths. Throughout time mothers have used sounds to teach their young the ways of survival.

The introduction first of executed and then

of depicted signs did little to decrease the importance of the spoken word as an educational medium. Various cultures produced more complex and more adequate systems of writing, but these remained available and useful only to the learned. Until the Middle