

Science alone is not enough

PRESTON A. WADE, M.D., F.A.C.S., New York

Address of the President. Following his inauguration on October 17, 1968 as forty-ninth president of the American College of Surgeons, Preston A. Wade addressed the incoming Fellows assembled at the Convocation in Atlantic City. Dr. Wade is emeritus professor of clinical surgery at Cornell University Medical College, and until recently was director of the combined fracture service of New York Hospital and the Hospital for Special Surgery. He is currently president of the New York Academy of Medicine. An authority on trauma and automobile crash injuries, Dr. Wade is particularly interested in the treatment of the patient with multiple injuries. He is a member of the Board of Directors of the National Safety Council.

WHEN I STOOD TO REPEAT THE HIPPOCRATIC OATH more than 40 years ago, upon my graduation from medical school, I must say I felt pride in my school and in my profession, and the recitation of the Oath impressed me greatly. I am sure most of you just inducted into Fellowship had the same feeling and I hope that the recitation of the Fellowship Pledge at this Convocation stirred your feelings again, as it did mine; that you felt pride in your profession and in your College of Surgeons; and that you realized the importance of the objectives of the College.

You have completed a long and arduous education in your chosen career, you have spent many years in concentrated study and training in your specialty, and you have been involved in years of continuing effort in the various fields of research, teaching, and surgical practice. This Fellowship you have attained is further indication of a successful accomplishment in your career in surgery. I commend you for this measure of achievement, I congratulate you and welcome you into Fellowship of the American College of Surgeons and I wish you good luck and great satisfaction in your future career.

I must admit that I envy you your youth and your future and the promise of exciting years ahead. If the progress of surgery in the last 50 years is any example, the advances of the next half century will be beyond our comprehension. Although I admit to the sin of envy of many of the advantages that you have and I have not, I must point out that there are certain compensations in having completed a long career, and so you do not have everything. At least I have the pleasant memories of my 40 years in surgery, and I would repeat them if I could, and I would love it.

Your mistakes will shake you

But more than this, there is something else I have that you don't have—I have the 40 years of my mistakes behind me while yours are yet to come. I am sure yours will be fewer and less serious than mine; but, nevertheless, on occasion they will be enough to shake you.

Striking evidence of the tremendous change in the scientific contribution to surgical progress is seen in a comparison of the program

of the Congress of 1913, at the founding of the College, and the present 1968 program. In 1913 the program was directed almost exclusively to surgical techniques and little or nothing was written or discussed that could be called "pure science." The surgical greats of the day, John B. Murphy and others, performed at operative clinics, or "wet clinics" as they were called then, where the amphitheatres were filled to overflowing. The discussions and lectures dealt with improvements in surgical techniques and advances in expanding areas for operative intervention. There was little of basic scientific research in the program; most research problems were clinical and there was little intimation of the future advances to be made in chemistry and the biological sciences.

On the other hand, in the 1968 program, there are literally hundreds of exhibits, movies, papers, and panel discussions on problems of pure science and their application to surgical treatment. In some, practical application is not even contemplated. The Forum on Fundamental Surgical Problems includes reports of very advanced scientific investigations, some of which may or may not become directly related to surgical care. This illustration of the vast development of scientific sophistication in surgical affairs is a measure of the advances made in the past 50 years.

The medical man who operates

The surgeon is now becoming the medical man who operates. The heart surgeon is expected to, and often does, know as much about the general medical aspects of heart disease as the cardiologist. Cardiology is now a surgical subject as well as a medical problem. Many of the old-fashioned surgeons of 40 years ago laughed at the attempted advances of science and made fun of electrocardiograms and studies of blood gases. They felt that the surgeon in his technical skill in operating was too important to waste time on pure, esoteric ideas. Indeed, some of the old *geheimrats* were so carried away by their image of greatness in techniques that they ignored the role they should have played in taking personal care of their patients and paying close attention to their students.

Modern surgery is now involved in a great deal more than technical dexterity. The re-

markable advances in pre- and postoperative care, as evidenced by the surgeon's mastery of metabolic disturbance and fluid balance and the control of infection, are examples of the modern scientific surgery. With the advances in computer skills and all of the contributions of the biomedical engineers and other bioscientists, x-ray crystallographers and medical economists, surgery is now assuming new dimensions which seem to have no limit.

From progress, problems

The tremendous progress in surgery has caused, as progress always does, new and unforeseen problems and it is to one or two of these that I should like to address myself now.

Today's medical student makes his choice of profession, in a large measure, because of involvement in varying degrees with human suffering and his desire to help alleviate it. Students applying for medical school are apt to indicate that humanitarianism is a chief motivating factor in their desire to study medicine. Some of this may be discounted, since the applicant may feel that to make a good impression at the admissions interview he should show interest in people. It is, nevertheless, generally accepted that humanitarianism is important in a medical student's choice of career.

Somewhere in the course of his medical education, the student becomes indoctrinated in pure science, or hard science philosophy, and tends to change his outlook, at least as he expresses it to his colleagues and his teachers, and adopts a much more hardened attitude toward medicine. It is obvious to him that anyone who continues to talk about studying medicine to alleviate human suffering may not always be popular with his colleagues. It is sometimes considered weak and rather childish to continue this attitude when one is struggling with intricacies of chemistry, biology, and physiology. As the student develops along his course, he is very apt to be influenced by some of his younger teachers whom he respects and admires, and it is often quite unfashionable for the young, busy teacher in surgery to display what may be considered sentimental attitudes toward medical altruism.

In his classic address, *Aequanimitas*, de-

livered at the University of Pennsylvania in 1889, Osler¹ made a great point of the need for imperturbability in the practicing physician, and although he did not relate his discussion to what we now know as behavioral science, he did, indeed, point out some of the important psychological attitudes which are necessary for a young physician to attain and assume in order to handle himself well with patients. It is, therefore, necessary and understandable that the young man brace himself to achieve this equilibrium and protect himself against the sentimental reaction to patient suffering which is sometimes painful and even repulsive.

Equanimity can be overdone

It is, however, a rather dangerous position to take if it is overdone, and because the student or the young surgeon in training has little to guide him except his own experience and his observation of his teachers, he may

develop an attitude of hardness that persists long into his professional life.

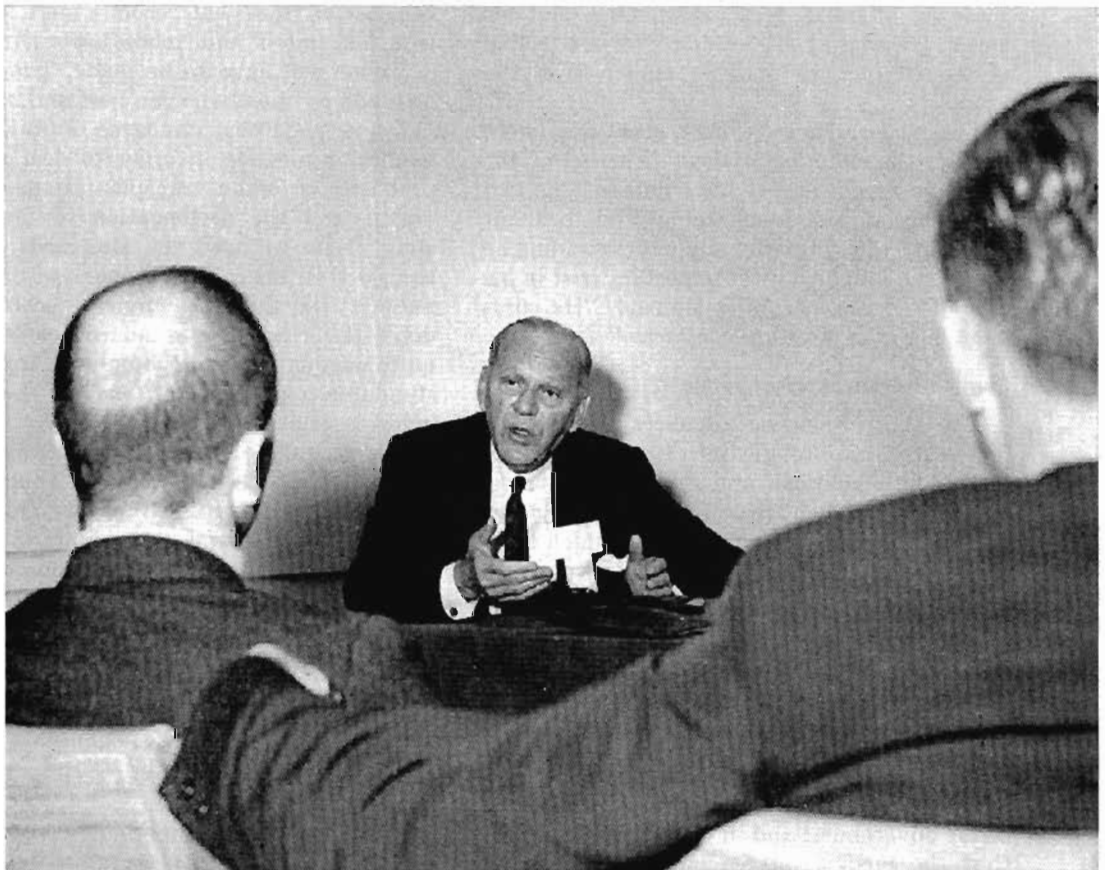
In the past, surgical texts and lectures rarely included any discussion of the personal relationship of surgeon to patient. Surgical training did not emphasize that in pursuing the objectives of medicine in the care of the sick, the young surgeon must learn the art of dealing with the patient beset by fear, frustration, and sometimes despair.

Hang on to wonderful idealism

A most important and hopeful sign of the profession's acceptance of this philosophy was the decision at Western Reserve to put students at the bedside of patients very early in their careers.

Recently, the dean at Yale² has indicated

President Preston A. Wade converses with surgeons at professorial noon held during 1968 Congress.



that the students there will be involved with patient care early in their studies "in order to produce doctors who are more humane and more sensitive." He further stated, "If the student spends his first two years in the classroom studying cells and molecules, as is now the case, he sometimes loses the wonderful idealism that made him want to be a doctor in the first place." This is a relatively new attitude which is being accepted by medical schools, and it is a most hopeful sign that the art of medicine is again being considered important along with the science which has become so predominant in recent years.

I do not pretend that the physician of today should try to emulate "The Doctor" in the famous painting of that title by Luke Fildes, although the poignant message of the artist is one we can all take to heart. We know that the doctor in the painting has little else to offer to the ill child and the suffering parents but his sympathy and encouragement, but these he offers in great abundance, and his strong presence at the bedside gives us a feeling of security as we imagine ourselves in the group.

The modern surgeon has a great deal more to offer the suffering patient. With all of the scientific modalities at his command, he can often accomplish remarkable and brilliant cures, but the sympathy and understanding he shows can still be a most important part in his care of the patient. As Galen said, "He cures most in whom most are confident."

Surgical advances upset public

The many scientific advances in the past few years have brought into focus the important moral, political, and religious problems, particularly in such areas as organ transplantation, and in the various therapies which have prolonged life in the elderly. These spectacular advances have caused unusual interest in the press, and as a result the public has become aroused, even suggesting that government commissions be appointed to decide whether or not patients should be operated upon and whether certain procedures should be regarded as experiments on human beings. This is indeed a dangerous proposal and, hopefully, wise heads in the government and in Congress will realize that the medical profession is well able to

handle these problems and still continue its advance in scientific investigation. It would be disastrous if the government or its agencies were to take over the policy-making of the medical profession.

Ministry of devotion is essential

Vannevar Bush³ in his recent book *Science Is Not Enough* has this to say about the future of medical problems:

"There is only one hope of avoiding confusion and strife as we look to the future. That is for the medical profession to have a new birth of wisdom and responsibility, to reacquire its ancient heritage: the full respect of the people. Never must there be occasion for the public to believe that medicine is organized, is seeking selfish ends, that it has forgotten its mission of ministry. Time after time, there must be acts, not just words, that prove a deep devotion. For the alternative, control by some bureaucratic system, is repelling. It repels because, as treatment becomes more and more complex, more and more expensive, tough decisions will have to be made. They should be made by those who can best understand."

Do we need new standards of ethics in the medical profession in order to deal with the problems of organ transplantation, artificial organs and the prolongation of life in the elderly? Do we need new standards of ethics to deal with the serious problem of premature publicity in the new surgical techniques? I don't think so. Our standards of ethics are quite adequate. We have only to apply these standards to problems of today in the light of modern scientific progress.

Our techniques have developed so rapidly that some of our philosophical thinking has fallen behind. As Russell⁴ says, "One of the troubles of our age is that habits of thought cannot change as quickly as techniques, with the result that as skill increases wisdom fails."

I am firmly convinced that the medical profession, and surgery in particular, will meet the challenge of these new problems without outside interference or control, and that the innate wisdom of the surgical profession will always catch up to and control the new changing techniques.

Advanced scientific methods of care of the elderly and those with far advanced disease

have posed new problems in this field. In many instances, the old, debilitated patient can be kept alive, sometimes indefinitely, and many are caused to live longer and often unhappily by constant and costly medical treatment. Such treatment of the elderly can conceivably deny help to a younger individual who might, with adequate care, be expected to survive to carry on a useful life. Should medical treatment sometimes be denied the old, infirm, and hopeless individuals? A decision as to overt termination of treatment seems to conflict sharply with our ethic that euthanasia by a positive act, that is an act of commission, is forbidden. We cannot deliberately end the life of an old person or anyone else. But euthanasia by omission of treatment in the old, helpless, hopeless case, may sometimes have to be considered.

Right to die cannot be denied

Furthermore, the right to die cannot be denied the patient and must be considered by the surgeon. He cannot sacrifice human dignity at the time of death if his treatment only prolongs the process of dying and adds to the suffering of the patient and his family.

To continue our natural investigation of these problems of the future, we must go further in our thinking. This is well presented in the book, *Human Destiny* by Pierre Lecomte du Noüy,⁵ another of our great scientists. I should like to recommend this book to you. In his book this renowned scientist who has been responsible for many advances in several areas in medicine points out that the rapid development of the material side of civilization has aroused the interest of men and kept them in a kind of breathless expectation of the next day's miracle, with little time left for solving the true problem, "the human problem." Men have been hypnotized by the incredibly brilliant display of new inventions following one another almost without interruption from 1880 on and are, like children, so fascinated by their first view of a three-ring circus that they even forget to eat or drink.

Du Noüy states that the purpose of his book is to examine critically the scientific capital accumulated by man and to derive therefrom some logical and rational consequence. He states that we shall see that these consequences lead inevitably to the idea of God. His book,

he says, is meant for all those who believe in the reality of human dignity and of man's mission in the universe; and for those who do not believe in it yet but who are anxious to be convinced.

One cannot contemplate the future of surgery without having these things come to mind and it is my hope that, as surgeons, we will not only take our part in the scientific development of our profession but, as du Noüy says, we will learn to "believe in the reality of human dignity and consider man's mission in the universe."

Our profession can and should have no fairer ideal than that expressed in Minot's beautiful sentence:⁶

"We have enthroned science in the imagination but we have crowned her with modesty, for she is at once the reality of human power and the personification of human fallibility."

References

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