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Presidential Address

Clinical Investigation and Social Responsibility

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It is platitudinous for me to remind you that science, with the technology which has followed closely upon it, has revolutionized our way of living. Greater freedom from onerous tasks for more people is clearly the direction in which improved technology and automation are leading. More leisure will require more extensive education, and the demand for better health will increase. That medical care should be one of the basic human rights has only recently been recognized. In many areas, medical care has been considered the prerogative of a small class, and the right to dispense it, the possession of a privileged few. But this situation is changing. Medical instruction does not exist to provide individuals with an opportunity of learning to make a living but rather to improve the health of the people. Medicine does not exist in a cultural vacuum but springs from a social sanction. It is this same covenant that gives rise to medical investigation. We are chartered by society to apply our training and ability to the vanguard of medical progress. For this purpose alone, support for medical research has been generously increasing. Without accumulation of new facts and continuous questioning of existing medical dogma, there would be no hope of advance, no prevention, no cure for those afflictions still beyond our grasp, and the practice of medicine would again become a sterile, empirical art infused with mysticism.

In addition to the direct benefits which society expects to accrue from its investment in biomedical research in the form of better treatment and prevention of disease, we know that close proximity to medical research is essential for good teaching. Since our knowledge and understanding of biological phenomena are so incomplete and fragmentary, the "truths" we teach our students—or even some that we may hear during our program today—are continuously subject to change. We live in a relativistic rather than a Platonic world of knowledge. If our teaching becomes dogmatic and we begin to impart absolute truths to our students, then we are in danger of establishing cults. Medical research has proven the most effective iconoclast in this regard. The intellectual environment created by good research is incompatible with rigidity of instruction.

As our mandate is to provide the vanguard of medical progress, so then must those activities which serve this goal be our legitimate domain. Those who have worried when the problems posed at the bedside have led the clinical investigator away from the patient into the laboratory should take heart in the goal rather than the details of its achievement. To use the words of the President's Commission on Heart Disease, Cancer and Stroke (1), "In the biomedical sciences, we are dealing with a spectrum of investigation ranging from fundamental inquiry into the nature of living cells to clinical care of patients. . . . No band of color in this spectrum is any more 'pure' or more 'basic' to the solution of disease problems than any other. All are essential, and they are mutally reinforcing." Let our members pursue their problems to whatever depth or level seems profitable to them to achieve the objective of increased understanding. Where voluntary collaboration of preclinical scientist and clinical investigator occurs, that is fine, but the line at which the clinical investigator stops and relinquishes intellectual responsibility for his problem must be a flexible one, to be drawn by each according to his abilities.

The clinical investigator has always been limited in the meaningful questions he can formulate from his observations of patients by the technology available to him for obtaining answers. Scientific technology has so expanded in complexity and sophistication that the task of the clinical investigator just to keep intelligently informed of the possibilities available to him for solving his problem has become enormous. To remain productive he can ill afford to limit his scientific horizons. Although he may delegate problems to others, he cannot delegate the responsibility of understanding; this is the distinction between remaining an investigator and becoming an administrator.

In recognizing and applauding the breath and depth of interests and activities of our members, I realize that I am simply acknowledging the existing state of affairs and not instigating revolutions. As I read through the many abstracts for today's meeting, I couldn't help but reflect on what it is that keeps our Society together. What is our unifying principle, our cohesive force? How do we differ from a society of physiologists, biochemists, or biophysicists Certainly the subject matter, the approaches and techniques, described in the abstracts I read do not differentiate us from others. As investigators, nearly all topics and certainly all approaches and technics seem within our domain. But regardless of our methods and subject matter, the unifying principle is that we all have

one common interest, the sick patient, and our efforts—directly or indirectly—a common purpose, to alleviate suffering. We are physicians who believe that we can contribute best by increasing knowledge and, thereby, improving medical care. Only our approach, not our goal, differs from that of our colleagues in practice who devote all their efforts directly to ministering to the needs of patients. Our activities are complementary: his to prevent and alleviate suffering, ours—as clinical investigators—to improve the tools with which he works. In the past both roles were comfortably and successfully encompassed within the same individual. The increasing sophistication of scientific knowledge and technics today makes it increasingly difficult for many clinical investigators to serve each role equally. Increasing support, however, has released us from the posture of make-believe. Others in the team can carry in strength those areas in which we must admit limited proficiency in order that we may be free to concentrate our interests in depth in other areas. This does not relive us of the obligation to keep our medical interests broad; it does relieve us of the pretense of being universal experts. A few months yearly making rounds on a general medical ward with alert young House Staff is a refreshing antidote to a constricted approach to biomedical problems, as is attendance at general meetings such as these. One can and must retain proficiency in some area of medicine and yet be free to work at whatever depth he deems necessary to increase knowledge and understanding in his chosen field. As long as an interest in patients remains our motivation, I have no fear that what we do will represent anything other than clinical investigation in the best and broadest sense of the term. I am also confident that our very numbers and variety of interests will ensure that observations directly involving patients will continue to be made and that understanding gained in the laboratory will not languish long for lack of an inquisitive mind to apply it productively at the bedside.

Our university hospitals with their obligation to the community, on the one hand, for the care of patients, and to the world of medicine, on the other hand, to increase knowledge and understanding of man, will continue to serve as the main centers for these activities. Under wise guidance both activities should flourish and strengthen each other. Patient care and clinical investigation must both be nurtured and kept in proper balance by continuously strengthening the weaker, never by weakening the stronger. To those—with whom I heartily agree—who believe more emphasis and support should be given to the application of the social sciences to medical problems, let me urge that such support be added to that for existing successful biomedical research programs rather than be subtracted from the latter.

Finally, I would like to consider briefly two responsibilities we assume if we are to permit full range of intellectual expression in choice of problems and approaches to their solution.

First, we must be ever mindful of the necessity to maintain high professional standards of scientific excellence. We are a much more diverse group by training and interest than were the founders of our Society, and such diversity, I hope, will increase as we welcome young investigators who are making significant contributions in new and exciting areas. This diversity brings with it a tendency to excuse a mediocre performance with the comment: "That's not bad biochemistry for a clinician." If we bring the techniques and knowledge of another scientific discipline to bear on our investigative problem, that is fine, but we must accept at the same time the responsibility to learn the limitations of these approaches and to use the new methods with the same care and control that would apply to their use by the nonclinical scientist. There is no room for the amateur dabbler. We must be especially careful to evaluate our progress and efforts critically. This constitutes one major argument for having nonclinical scientists working productively in adjacent laboratories in our clinics and hospitals. The tone of research is kept high and the temptation to self-deception is minimized. There is only one yardstick for excellence in science and its dimensions are constant.

Second, with increasing support available we must continuously assess our investigative effort against our goal of enriching man's knowledge and understanding. It would be good if we all took heed of Otto Warburg's recent admonition to the young investigator to have the courage to tackle the really important problems of our time (2). However, there will always be with us the need to have simple direct answers to practical problems which arise, particularly in the management of patients. No apologies need be made for such essential data-collecting studies, provided that they are conducted intelligently. There is, however, inherent in this type of study the danger of uncontrolled and uncritical expansion. These endeavors are often combined or collective studies to evaluate the effectiveness of certain forms of therapy. It is axiomatic that the less clearly beneficial is a form of therapy, the larger the effort needed to establish its validity, the larger the series required to achieve statistical significance. When the hypothesis under examination has vanishingly small validity, the effort approaches infinity. Many professors, hordes of research associates, numerous conferences, many double-blind studies, and millions of dollars are needed for such enterprises. Beware of over-inflated projects. Continuously re-evaluate the significance of your work. Although big projects and contractual research may be efficient means of obtaining answers to prescribed problems, we stand in some danger because of the large expansion in categorical research support that is being planned, of all being impressed into developmental or contractual programs. The important advances in the future, I suspect, as in the past, will come from individual investigators, not from the group. If we use our increased resources and facilities to assist and nurture the individual investigator, if we improve his intellectual environment, his contacts with similarly motivated colleagues, and—above all—free his time for his own work, then we will foster a rapid expansion of

medical knowledge. If we lash him to categorical projects with rigidly defined approaches and goals and entomb him in bureaucracy, we may even stand to lose from the expanded support we give him. We must plan for opportunities and expectations, but let the individual ask his own questions and seek answers according to his nature, for that is the art of the investigator.

If our mandate is to provide the vanguard of medical progress and if we regard medical education and medical practice as our two lusty and legitimate offspring, then it seems to me that clinical investigation and our Society have a long and productive life ahead.

References

1. The President's Commission on Heart Disease, Cancer and Stroke. A National Program to Conquer Heart Disease, Cancer and Stroke. 1964, vol. 1, p. 21.
2. Warburg, O. Prefatory Chapter. Ann. Rev. Biochem. 1964, 33, 1.