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# Presidential Address

## AMERICAN SOCIETY FOR CLINICAL NUTRITION

Our Society is two years old today. As your president, I should like to review with you the progress which our Society has made over its brief lifetime, and perhaps, more importantly, to restate its purposes and its goals. This past year I have had ample time for reflection on professional and scientific activities because I have been on sabbatical leave from the University of Pittsburgh working in the biochemistry laboratory at the University of Oxford.

One of the most compelling arguments for the formation of our Society as a Clinical Section of the American Institute of Nutrition, was that it would provide a forum for the presentation and discussion of original investigations in human nutrition in an environment which would encourage easy association with other clinical investigators working in related fields. The attendance at the meeting last year and today suggests that the problems under investigation by members of our Society are of considerable interest to our own and other clinical investigators.

Growth of a young society with well qualified members is another sign of good metabolism; last year the charter group of sixty-nine members was expanded to eighty-nine. This year an additional thirty-five investigators are being admitted, bringing our total membership to 124, a 75 per cent increase in fourteen months.

Since The American Journal of Clinical Nutrition, was formally adopted by the Society as its official organ two years ago, its circulation has increased from 2,700 to 3,100. On July 1, Dr. Willard A. Krehl assumes the job of Editor-in-Chief relieving Dr. S. O. Waife, who guided the Journal so effectively during its formative period. As indicated by spokesmen of the Council, it is hoped that members of the Society will think of this Journal as the preferred channel of publication for their original research.

To me it seems important to reaffirm that the primary goal of the Society is to provide opportunities for the presentation and discussion of original research in the field of human nutrition, defined in the broadest possible way, and to elect to membership in the Society talented investigators in this field. The Society should not become a club of professional workers dedicated to the importance of nutrition in medicine; it should not become a missionary society of zealots desiring to spread this gospel to others; and, finally, it should not become an agency for the formal endorsement of medical and public health measures in the field of nutrition. There are beguilements and pressures, unbecoming to a scientific society, which are brought to bear upon any society of standing which adopts "position papers" on various products and procedures. Even the "Seal of Approval" program of evaluating foods was dropped by the Council on Foods and Nutrition of the American Medical Association after several years of trial and tribulation. In rare instances, the Society may wish to take a stand on a purely scientific issue, but it is my recommendation that it steer clear of such hazards.

These distractions, I believe, are pitfalls to be avoided by our Society. Individual members, of course, are free to do what they please in these matters; many of us will exert much effort to influence public policy through more professionally-oriented societies and other media. However, our Society should be primarily a scientific society, free and unfettered, politically untied, and devoted to research,

education and training of research workers. It should entertain the inevitable clashes in opinion which occur on any frontier of research, rather than strive for unanimity of opinion; it should support inquiry rather than endorsements; and it should catalyze more effective education of physicians in the field of experimental and clinical nutrition.

To go a little further than just enumerate goals, I should like to consider in greater detail some of the increasingly difficult scientific and educational problems which physicians, who conduct clinical investigations of all types, including that in the field of nutrition, are faced with today. It is of interest that over the past twenty years all branches of clinical investigation have become as dependent upon chemistry and physics as nutrition was years before. Today, the margins between research and the fields of hematology, gastroenterology, endocrinology, metabolism and nutrition are so blurred as to be nearly meaningless.

Clinical investigation as a technic for the study of biology is severely circumscribed to two factors: (1) it must be conducted by physicians, and (2) it must, by definition, be carried out in man. I should like to discuss these two limiting factors in order to dramatize some of the problems confronting the members of our Society specifically, and all clinical investigators generally.

(1) It is obvious that because of legal, ethical and professional considerations, a licensed physician must be in charge of clinical investigations. Hippocrates, speaking as a clinician rather than as a scientist, observed in his famous first aphorism that "Life is short, the art long, opportunity fleeting, experiment treacherous, and judgment difficult." No one would deny that the bedside is the physician's domain, but what are his qualifications for carrying out research of any kind, to say nothing of studies in man? It would be conceded by all that some training and experience in the use of the scientific method and some intensive education in the proposed field of study are minimum requirements for the potential investigator.

The education of physicians has been primarily professional throughout the entire history of medicine. The training was, and still is, quite appropriately aimed at providing a basis for practice. At the time the Oxford University was founded in the twelfth century, the only graduate programs available were in theology, law and medicine. The training in medicine began with a degree in the liberal arts and philosophy. The seven liberal arts were divided into the *Trivium*, grammar, rhetoric in English and Latin, and dialectic; and the *Quadrivium*, arithmetic, geometry, astronomy and music. The philosophy taught consisted of three branches, moral, metaphysical and natural, the latter branch gradually encompassed the natural sciences as they developed. After seven years of these studies, a masters degree was conferred and the candidate entered one of the advanced professional schools.

In medicine, the advanced program consisted of learning by rote the writings of Hippocrates and Galen, and seeing patients under the guidance of a practitioner.

Little has changed in the education of medical students over the past 700 years. The details of the curriculum have changed, but the operation is roughly the same. Training in medicine still requires a liberal arts education followed by seven or eight years of professional training.

The time devoted to the natural and preclinical sciences has been expanded but, despite the best efforts of many teachers of biochemistry, anatomy, physiology and microbiology to make these courses fundamental, they have been and are still looked upon by the majority of medical students and their clinical teachers as the "handmaidens" of medicine rather than as an armory of research information and technology. It is because of this fleeting background in science and the burden of covering a wide field of clinical medicine in order to prepare him to treat a wide range of patients with reasonable confidence that the young physician contemplates investigative work.

Think, for the moment, of the diammetrically opposed type of training given the natural scientists! Far from being asked to broaden his horizons on undertaking graduate study, he undergoes specialized training and actual participation in research technics and procedures under an experienced adviser. The culmination is the production of an original thesis on which he is examined, and on the basis

of which he is awarded his advanced degree.

Sir Charles Snow has written a good deal lately about the two cultures, humanistic and scientific. Using as his material observations on the degree of understanding and communications between fellows in arts and those in science at the University of Cambridge, he has posed some interesting questions and provoked a considerable amount of controversy.

I believe his ideas can be applied to many situations of superficial collaboration between clinicians and physical scientists attacking medical problems. If conflict over "the cultures" develops, as it not infrequently does, with the physician taking the more humanistic view, teamplay ceases. Teamplay, at best, is no substitute for the well trained clinical investigator who is a master of his technics and a serious student of the field he is investigating.

At one time a research-oriented medical student could learn enough physiology in the medical curriculum so that an additional year or two of postdoctoral training in a productive laboratory could launch him on a research career. So rapidly has the frontier of knowledge advanced, so revolutionary has technical and methodologic progress become, so dependent upon the total body of knowledge in physics and chemistry have biologists become, that such a transition from physician to research scientist is rarely possible these days.

I am reminded of a story about Queen Mary receiving an honorary Doctor of Civil Laws degree from Oxford University. As the academic procession was proceeding from the Sheldonian, a townswoman was overheard to say to her neighbor, "You know, she's not a real doctor at all." How many times have we heard that comment repeated, i.e., that so and so Ph.D. is not a "real doctor" after all? We might truly ask the question who, in fact, is the "real doctor" in the matter of research concepsion and execution?

The point is that the modern clinical investigator must be both a competent physician and a well trained, experienced scientist. This requires arduous training in mathematics, chemistry and physics in addition to the usual training in medicine. In fact, the adequacy of the existing preclinical sciences for the solution of biological problems of the future might be questioned. Biochemistry, for example, has passed through its descriptive phase and the analysis of metabolism in terms of enzymology. As the mechanisms of enzyme action and the genetic control of protein synthesis are probed, the need for chemistry and physics to illuminate the way to further advances is becoming increasingly clear.

What I am saying is that the education of physicians in the art and science of investigation is as much our responsibility as the education of physicians in the applied aspects of our field. We do a disservice to our profession, to our Society and to our junior colleagues if we simply go through the motions of research in routine testing or survey programs. Only by applying our best to the problems that face us, only by making more time free for actual laboratory work, only by constant review of the disciplines that underlie the fields of metabolism and nutrition, can we make real progress in our field and provide proper guidance for our trainees.

(2) The use of man as an experimental subject, presents a paradox. We must agree with Pope that "the appropriate study for man is man." The variation among species requires final experimental validation of hypotheses in man. On the other hand, the limitations to experimental design imposed by the use of man as an experimental subject makes it imperative to employ a range of preparations in the study of a given biological phenomenon. The slavish operation of metabolic wards on a factory schedule is often not productive. Generally, diversification of research approach is required to fully explore problems posed by initial observations in man.

In conclusion, my soundings indicate that our infant Society is in an appropriate channel of growth and development and proceeding in a useful direction. Among our responsibilities in the field of education I hope we will include the training of investigators upon whom the future of our Society and the field it represents depend. We must move with the times and accept the challenge to measure our progress not by the number of studies completed in man but by the total elucidation of these problems in general biological terms.

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