Where's the beef?

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Twenty-five years ago, while some of the younger members in this audience were gaining first-hand experience in the nutritional benefits of human milk, and others were preparing for graduation from high school or college or, as in my case, from medical school, a group of leaders in the field of human nutrition conceived of and organized a new society which was incorporated in September 1959 as the American Society for Clinical Nutrition. I will not dwell in detail on those important events which we celebrate on this day, but I will take this prerogative of office to provide some personal views on these first twenty-five years of our Society and of the discipline, clinical nutrition. At the time of its foundation, after discussions which evolved over several months and at three key meetings, the original purposes of this Society were clarified by its founders. I was interested to read three goals in the review by our archivist last year (1):

1) to advance the recognition of nutrition as a medical discipline
2) to improve standards of nutrition education, and
3) to stimulate more good research on human nutrition and metabolism.

My predecessors have variously emphasized aspects of this original charter in their presidential talks. Most have emphasized our central mission of fostering research on human nutrition and metabolism and I agree that that is our first priority. But what about our society's contribution to the coming of age of our discipline. The assessment of whether we have in fact accomplished our mission of becoming a discipline is made somewhat more difficult by the inevitable differences of opinion about what that term means in general and especially what discipline means in respect to clinical or human nutrition. I suspect that there would be general agreement that an absolute requirement for claims to be a scientific discipline is evidence of a solid and vibrant activity in research. Others would claim that our discipline will be identified by what we teach our disciples, that is, our students and, our post-doctoral fellows. Here we note the laudable growth of human nutrition postdoctoral training programs from a handful in 1959 to 30 by the latest survey. Indicative of our concern for this development is that the content of such programs will be the focus of the workshop sponsored by the Education and Training Committee of this Society in two days. Increasing numbers are being certified by the ABN. Still others would argue that our discipline has come of age with the increasing recognition of hospital malnutrition and the newer technologies in enteral and parenteral therapy which can be brought to bear to address that problem, techniques over which trained clinical nutritionists increasingly have exerted direction. I would argue that all of these are important elements in the definition of the discipline of clinical and human nutrition. But though they may be necessary, they may not be sufficient to define that discipline. Even the content of our research does not define our discipline, as was so clearly pointed out by Ted Van Italie in his presidential address a few years ago (2). He demonstrated graphically that

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our scientists make eclectic use of the disciplines of biochemistry, physiology, pharmacology, etc, and that our scientific concerns are extensively shared by others who identify themselves with cardiology and endocrinology and gastroenterology, etc without the requirement, as they see it, to identify with clinical nutrition. If our research methods are not unique, and many, if not most, of our research projects could qualify for designation in other established disciplines, then how do we define ourselves? I propose that it is the agenda of issues we address and inform by our scientific efforts that truly qualifies us as a scientific discipline in human nutrition. We may be biological scientists because we do biological science (hopefully with more focus than the biblical description in Daniel (3), “Many shall run to and fro and knowledge shall be increased”) but we are nutrition professionals because of the way in which we use science in education and problem-solving.

Let me try to illustrate. When I reflect upon the national and international nutrition agenda, and I think of the way that that agenda is addressed in the public press and media, in the halls of Congress, and in the courts, with all too little emphasis on the science, I am reminded of the ad which has become a popular battle cry “Where’s the beef?” “Where’s the science?” and more specifically the scientific method, as applied to problem analysis? Where is the science when a Presidential Task Force on Food Assistance Programs states that “surveys have not uncovered any major problems deriving from undernutrition” (4) in this country in the face of evidence derived from HANES II that we have a 5.8% incidence of iron-deficiency anemia in infants under two and a 5.7% incidence in women of child-bearing age, and an incidence of low birth weight of 12.5% for blacks and 6.8% for the entire population (5)? Where is the science which evaluates the needs and accomplishments of our food assistance programs? Where is the science which directs 40% of the American population, by a recent FDA survey, to take vitamin supplements, usually daily, and an increasing number to take increasing doses of more dangerous minerals? And how secure is the science which informs the public discussion of what is the most prudent or ideal diet for the population as a whole, not individuals, to ward off not only heart disease but also cancer, and possibly aging? And where is the science that directs our population to a safe and sound means of weight control; and where is the science which underlies decisions to undercut throughout the world, especially in the Third World, programs in public health nutrition presumably on the grounds that diet quality concerns, exemplified in the controversial protein gap, can now be ignored as we turn our attention to raising more food with more calories, a laudable but insufficient goal in the face of iron deficiency, xerophthalmia and growth-stunting? And to come even closer to home, where is the science which determines who are the really appropriate targets for our powerful techniques in intravenous and enteral nutrition, especially for the exploding use of the technique of home parenteral and enteral nutrition? I am not so arrogant as to claim special wisdom for nutrition scientists in solving the world’s problems. My argument is that it is precisely because we have a professional concern for what are the measurements of dietary adequacy, nutrient requirements, and the techniques by which to identify nutritional disease in the clinical setting, or in neighborhoods, or in the field, and because we give priority to identifying the proper target groups for nutritional supplementation with either micronutrients or macronutrients, that we must also insist that the scientific data base, some basic and some applied, must inform the public discourse and even the policy-making to a much greater extent than is currently the case.

I am not suggesting, as some of you may fear, that we lessen our emphasis on sound nutrition research and go off to join the Washington cocktail party melee. I am suggesting that because our research is characterized by its human biology orientation (which must, I believe, be preserved at all costs, and our two awardees today are excellent examples of that orientation), and because of the ways in which we pose questions that have a discernible relationship to public or individual health that we must see to it that sound science will influence health policy. That will mean that some of us may
have to get into the fray, a few of us full-time as in Government, some of us only from time to time. We’ve got to be prepared to be candid, even in public discourse, that an hypothesis which links a certain kind of dietary pattern to an increased risk of a degenerative disease is an hypothesis, and we must be prepared to argue that there is a policy difference between acting upon a mature hypothesis versus action in the face of a developing hypothesis or an immature one. Our scientific advocacy, however zealous we may feel, need not take the form of sounding as though we have all the answers when indeed the jury may still be out on many of these questions. We need to recall again and again Nobel Laureate Peter Medawar’s Advice to a Young Scientist: “I cannot give any scientist of any age better advice than this: The intensity of the conviction that an hypothesis is true has no bearing on whether it is true or not” (6). And that goes for our certainty about the diet cancer hypotheses as well as for our arguments about the link between Reaganomics and malnutrition in America. About causes of malnutrition or famine, I’m reminded of the famous interchange between GB Shaw and GK Chesterton, both formidable verbal warriors. Shaw was a lean, sardonic, vegetarian; Chesterton a hearty, obese, meat-eater. He once observed to Shaw, “Looking at you, Shaw, people would think that there is famine in England.” Shaw retorted, “Looking at you, Chesterton, people would think you were the cause of it.”

If you can accept these concerns as legitimate ones for our discipline, if not for our Society’s agenda, then you may need to see that certain concerns follow: Public health nutrition is integral to this definition of the clinical/human nutrition discipline. In our training in clinical nutrition, and even in this annual meeting, public health and nutrition needs greater emphasis. Also the erosion of centers of excellence and training in international public health nutrition will continue if we don’t join to sound the alarm. But the solution is not, I think, to have departments of public health nutrition which do not interface with other laboratory and clinical nutrition elements in the same or neighboring institutions. It also follows that a distinction between human nutrition and clinical nutrition is artificial and unscientific. Any claim that they can be separated so that one funding agency can be responsible for funding human nutrition research and another for clinical nutrition is scientifically misleading and ultimately shortsighted. Therapeutic nutrition, particularly the new parenteral and enteral techniques, has become a critical function and stimulus to our discipline but here again it must be seen as one part of the larger challenge of clinical nutrition. Indeed, no area of our discipline offers greater opportunities for research in human nutritional biology in addition to the need for careful clinical trials. As nutrition scientists we need to take the lead in reminding university administrators, and those in government, that these separations between public health, and human, clinical, and therapeutic nutrition are artificial, and separation should be avoided, not fostered, by administrative or fiscal arrangements.

I have thus far emphasized our collective responsibilities as individual human nutritionists. Our efforts as a Society to introduce scientific considerations into policy discussions will take a number of different forms. We can build upon an excellent tradition of using our yearly clinical nutrition symposium at this meeting in some years to address scientific issues which have public policy concerns as we have with discussions of national dietary goals and our review of the relation of nutrition to aging. This year, on short notice, we had what I hope will be only the first in a regular Public Policy Forum to examine the way in which scientific evaluation of a key federal program such as WIC can or should enlighten policy decisions. (I can’t help taking the opportunity here to observe that one of the measures of our coming of age as a discipline is the fact that we clearly need more than one day for our meeting, especially as we consider adding a postgraduate course to our annual gathering. We will need, I am sure, to be considering some experiments in the near future as how to make that possible.) We will try to make effective use of our new Science Officer, to help to coordinate the efforts of both ASCN and AIN in making our research activities a more meaningful part of the policy landscape.
We must recognize that there are other voices and other organizations with special nutrition concerns (and that too indicates to some extent the coming of the age of this discipline) which have, at least in selected areas, common interests. Our relationships with NIH, USDA, FDA, and Congress, need both the element of advocacy for more and more effective support of human nutrition research and the offer of our expertise in helping to define priorities for public policy pronouncements. In this regard, for example, we must remind the USDA and Congress that the anticipated several-fold increase to 28 million dollars in competitive grant support for biotechnology is attractive but 2 million dollars is all too small for the competitive grants program in human nutrition, and that figure has not grown in years. We must remind the NIH that the enlargement of the Clinical Nutrition Research Unit program from 7 to 10 or 15 is an essential recognition of the need for coordination and outreach in human nutrition research and we must remind Congress when Congressional committees decry the lack of adequate data on the nutritional status of the American population that funds for NCHS statistical programs were drastically cut a few years ago prompting the New York Times headline, “Former Cuts in Data Imperil Data on Cuts.”

I can already hear older and wiser voices murmur with caution that we will lose our birth right in nutrition science if we become embroiled in politically charged discussions. One of my predecessors (7), himself not a total novice to the art of nutritional disputation, warned against our Society becoming “an agency for the formal endorsement of medical and public health measures in the field of nutrition.” “These are beguilements and pressures,” he warned, “unbecoming to a scientific society.” To that I would only answer that I recognize the danger but insist that we must find a way to communicate with policy-makers without compromising on our science.

I am reminded of the story of the airplane which has been flying for what seems like an eternity through a cloud bank before the welcome voice of the pilot appears over the loud speaker to announce good news and bad news. The good news is that the plane is making excellent headway at 500 miles ground speed, the bad news is that we are lost. We are making excellent speed in nutrition and we are gaining altitude and certainly visibility but we may be losing the ability to set a course or agenda which links nutrition science to nutrition policy. Only at some peril can we leave that navigation to others less well-informed and less committed to the use of science. It’s a little turbulent on this flight and the enterprise is pretty unregulated at present, but the trip promises to become even more exciting. Anyway, there’s no turning back now.

References