Acceptance of the Howland Award

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The air has to be made right.

—Lewis Thomas

In his essay on natural science, Lewis Thomas emphasizes that scientific behavior, which underlies all advances in science, is actually instinctive in nature, almost ungovernable: "It cannot be prearranged in any precise way. What it needs is for the air to be made right. If you want a bee to make honey, you do not issue protocols on solar navigation or carbohydrate chemistry, you put him together with other bees . . . and you do what you can to arrange the general environment around the hive. If the air is right, the science will come into its own season, like pure honey" (1).

What can be done to make the air right? I propose that a prime factor is the institution known as the family. During the next few minutes—please note the word "few," for someone has said that the beginning of a successful speech should be very close to the end—I shall try to emphasize the importance of this institution. Perhaps the plural form would be appropriate here, for we who attend meetings of the American Pediatric Society really belong to several families.

When we hear the word "family," we immediately think of the biologic family, but then the very next thought is about the increasing fragility of the families of today. Indeed, this fragility has a profoundly negative impact on modern society, a destructive influence which, in my opinion, far outweighs the specter of the atomic bomb. My own family has served me so very well; my life has been enriched by their unswerving support. A recent questionnaire from the Association of Pediatric Department Chairmen asked if family duties had interfered with one's academic career; my answer was a resounding "No!" As pediatricians, we should do everything we can to help stabilize the American family; as for me, I have a truly noble family, one that has done so much to make the air right.

I now pass on to another important family, namely the University, ideally a community of scholars devoted to teaching and the advancement of knowledge, in an atmosphere conducive to these aims. Henry Rosovsky, former dean of Harvard College, says it so well: "Academic departments need to provide young scholars with a sense of community . . . they should resemble a family: supportive, guiding, and nurturing. At its best the department can become a partner in the progress of its younger members, helping each one to attain their capabilities" (2).

But what about the matter of tenure, which is viewed with such great suspicion by nonacademics? Rosovsky rises to the defense of tenure and its implied obligation: tenure is "the principal guarantor of academic freedom . . . without long-term obligations, our sense of internal discipline would be much weaker." He looks upon "tenure as social contract: an appropriate and essential form of social contract in universities" (2). This combination of scholarly independence and security for university faculties is what makes the air right.

I have had the good fortune to serve under a succession of superb chairmen—Samuel Clausen, Alexis Hartmann, William Bradford, Robert Haggerty, David Smith, and Robert Hoekelman—and to have had the wise counsel of Gladys Fashena

during my brief stay in Dallas. All were kind and supportive, even forgiving when necessary. Some are wont to say that a change of chairman is a fate to be feared, but I found it easy, even helpful, because each brought a fresh point of view. In fact, the one thing they had in common was a concern about budget problems! To return to my theme, each of these individuals made it possible for me to function and to enjoy the academic life: by their wise action and counsel they made the air right.

Just after the war, Dr. Hartmann arranged for me to spend a year at Los Alamos, New Mexico, where in the midst of patient care duties and some explorations of the lovely countryside I managed to learn firsthand some of the mysteries of radioactivity. Incidentally, my predecessor in that post was Henry Barnett, who also preceded me, this time by 8 years, as the Howland Awardee.

Upon returning to St. Louis Children's Hospital, I was able to obtain a grant from the Atomic Energy Commission—I think the amount was \$8,000—but I was upset to learn that Washington University had tacked on a few hundred dollars for overhead! What in God's name was overhead? In retrospect, of course, the university's decision was a wise one, but at the time it seemed like an unnecessary expense.

Then, in the late 1950s, after I had returned to Rochester, serendipity came to the rescue. I had toyed with the idea of using radioactive potassium to study certain aspects of metabolism, but was hesitant to do so because the only available isotope (^{42}K) had such a very short half-life (12 hours). It so happened that I was sharing the ride to and from the Medical School with Dr. John Hursh, a member of the Radiation Biology Department. These twice daily conversations produced a lot of information, among which was the fact that my companion was constructing a massive steel room that would permit the detection and quantitation of low-level gamma rays emanating from the human body. The purpose of this instrument was to monitor fallout from the atomic bomb explosions. I asked if it could also detect potassium-40, a natural radioisotope known to be present in the human body. The answer was "Certainly!" So now it was possible to determine total body potassium without giving anything to the subject or taking samples of any sort. I first presented this concept at the American Pediatric Society, Swampscott, MA, May 1960.

With the knowledge that the potassium content of lean tissue is reasonably constant, this method can be used to estimate lean body mass, and hence body fat content, in a completely non-traumatic fashion. I have made good use of this instrument over the ensuing years, in studying body composition during growth and aging and the changes wrought by disease and by nutrition (3). Our two daughters are among the subjects who helped establish a normal growth curve for lean body mass.

Once again, the air was right: I was given a joint appointment in the Department of Radiation Biology; I was allowed to exceed the usual age limit for pediatricians and so was able to study adults. The University climate has served me well, as has the National Institutes of Health in supporting my research. The Research Career Award has been a stabilizing force—and a stimulating force—in my career. I have had the luxury of proceeding at my own pace; I was able to take a sabbatical year

abroad, to write a book, to do a bit of thinking, and to teach medical students. It is most unfortunate that the NIH has abandoned these awards.

I also look upon the American Pediatric Society as a family. I well remember the first meeting I attended, as a guest of Henry Barnett and Bernard Laski, in Stockbridge, Massachusetts, in 1947. It was a real thrill to hear Dr. Charles Dent describe the technique of paper chromatography while waving the amino acid spots in front of an amazed audience. Then, the family was small—limited to 100 members—so the Society's elders could greet everyone by name as they dined at a table next to the dining room door in the Red Lion Inn. For me, the air was right, and it still is right as this family has grown and prospered.

It is with unbounded pride that I now join the list of eminent

Howland Awardees. I am fortunate to have had such wonderful families—biologic, University, American Pediatric Society—and I am grateful to them for their collective contributions to my career, for providing the proper environment and the necessary stimuli. Together you succeeded; you have made the air right. Many, many thanks.

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2. Rosovsky H 1990 *The University: An Owners Manual*. WW Norton & Co, New York, pp 176, 182–185
3. Forbes GB, 1987 *Human Body Composition: Growth, Aging, Nutrition, and Activity*. Springer-Verlag, New York, pp vii, 350