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Horticulture at Risk

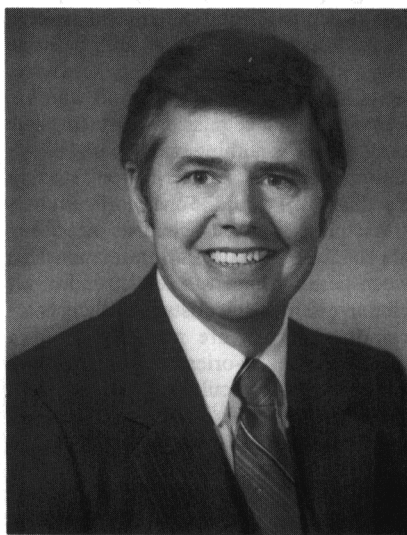
Presidential Address

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ASHS President, 1990-91

It is an honor and a privilege to present the presidential address to the 88th Annual Meeting of the American Society for Horticultural Science. As I am sure has been the case with past presidents, I reread former presidential addresses in an attempt to seek out an area that had not been highlighted already. It instantly became nostalgia time. I encountered the first presidential address that created a strong impression in my mind. It was the message that the late John Carew shared with us 25 years ago in Maryland (1966). His words were as hot as the weather. Dr. Carew had sought a realignment of the Society's mode of operation—a plan to instill new vigor and vitality in our Society. He had a message about horticulture—about what a privilege it was to work on horticultural crops. It is a message that all department heads should read and call to the attention of scientists who may lack Dr. Carew's unique appreciation for horticulture. I read the message John Bukovac (1975) delivered—when he talked about a bold, courageous move to consider an entirely new organization for our Society. An organization composed of working groups and discussion sections as we have today. And I enjoyed examining again the message of the innovative Bud Weiser (1981) who dreamed of a national entity that ultimately became The Board on Agriculture. These are some of the highlights in my gleanings of previous ASHS meetings, and you no doubt have memories of similar highlights.

I would be remiss today if I did not chronicle the many accomplishments of the Society in the past year. As I reviewed the regional meetings, the actions of the board, and the interactions with headquarters staff and



members of the Society, the thought came to mind that the Society has accomplished a great deal in the past 8 months. We have our first Beach Foundation member; we have our first Venture Fund; we have a new class of Corporate Membership; and our first Career Industry Award; it is our first full year in our new offices; it is the year of our first Congressional Fellow; it is the year we took serious, but cautious, steps toward increasing publications; and it is the year we initiated our 27th class of Fellows (now numbering over 360). Society growth continues on nearly all fronts—membership, pages of publications, numbers of ACB chapters, and dollars in the treasury. Yes, it has been a good year and yes, we should all be proud of our Society. Previous leaders, as well as all of us as Members, can take pride in these accomplishments. Society accomplishments are really too numerous to mention. ASHS is alive and well. It is okay to be happy and proud, but not to be complacent and pompous.

In recalling the year, I also thought about the major research interests of our Society and

how well they matched the national research agenda (1990). The major items on the national research agenda for agriculture are now covered very well by ASHS scientists. Each year our Society ranks ~30 research areas that are developed via input from numerous state, federal, professional, and private organizations. The highest ranked research areas are supported in a consensus fashion and advanced through the federal budget process. Hopefully, many will receive increased federal funding. This year's list (K. Feldman, Texas Agricultural Experiment Station, personal communication, 1991) includes the following high priority research areas: nutritional improvement and food safety; integrated crop and pest management; water quality; sustainable agriculture; and global climate change. If you look at your Pennsylvania State Univ. ASHS program, you will find that we have workshops, colloquia, and numerous papers on these research areas. We are on target and conducting research in the high priority program areas.

In preparing this talk, I also thought about the future. I believe you will agree that horticulture, like most of agriculture, will become more technically, biologically, and managerially intensive with each new year. Obviously, horticulture will also become more global. Governmental intervention and public concerns for a cleaner environment and preservation of natural resources will force us to become less dependent on agricultural chemicals. Our biggest clientele group—the general public, the user of horticultural products (isn't that everyone?)—will likely know less and less about horticulture and where horticultural products come from. The development of human resources to address these changes should seriously interest and challenge us.

The need to communicate

I do have a concern for what the future

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holds, not necessarily for the Society, but for the science and art of horticulture. Those of you in academia have never had a bigger challenge or issue to face than that which faces Depts. of Horticulture in the coming decade. No, I do not mean funding. I believe federal dollars will increase because of the National Research Initiative, the formula funding (Hatch), and the wealth of special grants and other kinds of special interest funding to service the research arm of our institutions. More on this later. The challenge I refer to here is our pressing need to educate and communicate with our constituencies, clientele groups, and the general public about horticulture. In this area, we are taking too much for granted. Too often the prevailing attitude is captured in the title of a book that was popular a few years ago: *Where did You go? Out. What did you do? Nothing* (Smith). The book was a takeoff on the lack of parent-child communication. Individually, many of us are guilty of a similar transgression when we fail to promote horticulture. The attitude of "let the other guy do it-it is not my job" prevails too frequently. After thinking more about the promotion of horticulture, I decided this should be the central theme of my presidential address.

I believe our Society is doing its part in helping to promote horticulture. We are a member of several consortia that give horticulture visibility and a positive image. They are supporters of good science and education. We are a member of the Coalition for Advancement of Research on Agriculture, Food and Environment (known as CARAFE); we are a member of the Coalition on Federal Agriculture Research Missions (COFARM); and we are a member of the Council for Agricultural Science and Technology (CAST). Within our Society, the Research Division continues to grow in both number and in vigor. Our Educational Division has forged ahead with plans for the production of a video that will enhance our image with potential students and their teachers. Our Industry Division continues "on a roll" as they enlist new corporate members, sponsor a short course, and give a Career Award for the first time. The International Division is establishing closer ties with other horticultural societies. The Extension Division is proposing the development of computerized data bases for various horticultural fields. The board has moved ahead with plans proposed by the Public Relations Committee to develop a marketing and public relations plan for ASHS. All of these activities are positive signs of growth. However, there is *one major concern* for the Society that I wish to mention. ASHS needs a long-range plan. A *strategic plan*, complete with an operational mechanism, that addresses where ASHS ought to be in the year 2000. It is unfair to our committees and the membership to move forward without an identification of such organizational goals.

Now it is time to direct my comments to each of you, the membership. It is time to be complete professionals, *to act as individuals*,

and to do some things that we apparently not only do not do very well, but that obviously we do not like to do. That is acting on own initiative. I want to stimulate and sensitize you to make a positive decision about personal involvement into the promotion of horticulture. The Society cannot do this alone. The future of horticultural art and science are at risk! Why at risk? Because of declining student enrollments, declining numbers of agriculture-oriented extension specialists, and declining numbers of horticulturists in Depts. of Horticulture. I could go on.

The disciplines of horticulture

I would like to discuss these problems in terms of both the good news and the bad news. I am going to start with faculty members in Depts. of Horticulture. I would like to call your attention to the definition of discipline-oriented scientists developed by our ASHS Ad Hoc Committee on Horticulture: A 21st Century Challenge (Daie et al., 1990). Discipline-oriented scientists in horticulture departments are those who were trained in such fields as botany, plant physiology, biochemistry, genetics, or molecular biology and who are expected to conduct mission-oriented basic research. There is nothing wrong with being a discipline-oriented scientist. If I were starting over at this time, I would be one. Horticulturists and discipline-oriented scientists need one another badly. We need to nurture relationships between these two kinds of scientists and attract discipline-oriented scientists to our Depts. of Horticulture. If we are not successful in attracting discipline-oriented scientists and training them in horticulture, who will teach introductory horticulture and the production-oriented courses in the year 2000? A trained horticulturist or a molecular geneticist who learns about row spacing, plant density, and other forms of cultural control one day ahead of the class. The good news is that there are going to be many scientists available between now and the year 2000. The bad news is that not many of them will be horticulturists. Accept the challenge! Adopt a discipline-oriented scientist and add to his or her training an understanding of horticulture practice and science. This process will require patience. Think of the reverse situation—consider the difficulty that a horticulture specialist such as a weed scientist would encounter in teaching a class on RFLP, RAPD, and YAC technology. Horticulture needs both kinds of scientists to survive. If you are a discipline-oriented scientist in a horticultural department, but not yet a horticulturist, then learn, teach, and extend horticulture. Join our Society and publish in our journals once a year. If you are a horticulturist who lacks an appreciation for the contribution of a discipline-oriented scientist, then upgrade your knowledge and discover how that knowledge can contribute to horticulture. We can learn a lot from one another.

I have a real fear that as we replace more

and more horticulturists who were trained as generalists with more specialized scientists that we will be dividing our departments into classes of citizenry. This could result in considerable polarization unless we cultivate an appreciation for each other's contributions to the total departmental or unit effort. I am sure those of you in industry are undergoing similar transitional trauma.

I am very comfortable with the quality of the young scientists within our Society. They are extremely talented and I believe that we are going to continue to get our share of good scientists. The question is whether or not we can interest them in also becoming good horticulturists.

Student recruitment needed

Who is going to recruit students and sell horticulture to undergraduates and K-12 students, and to their teachers, advisors, and the vocational agriculture instructors? Although demographers tell us that enrollments are going to decrease in the 1990s, the good news is that there will be many students at both undergraduate and graduate levels. The bad news is that horticulture enrollments have leveled at best and there may not be many horticulture students.

Our universities are going through tough times financially, and most land-grant institutions are looking at flat or reduced budgets in the next few years. A recent *Chronicle of Higher Education* (1991) article said that 30 states cut their higher-education budgets an average of 3.9% this year. University budget reallocations in future years are likely to be based on student contact hours per teaching faculty member and on success in obtaining, competitive grants. We must, as individuals, spend more time recruiting prospective college students to horticulture. Volunteer to talk to groups about horticulture and bring in interns. We need to find ways to integrate an understanding of food production and plants into the K-12 curricula. The educational program that Dr. Paul Williams at the Univ. of Wisconsin has built using "Fast Plants"—rapid cycling Brassicas (Univ. of Wisconsin, 1987)—should inspire all of us in this effort. At times we have turned off or ignored both teachers and students. We need to recognize the demographics of today's students. Their makeup is changing and maybe we need to change our methods of teaching. The cognitive skills of today's students differ from those of 10 and 20 years ago. We should broaden our teaching in order to give a broader education, particularly through the BS degree level. It is a tough agenda if we try to do it in 4 years. Have we given enough thought to the undergraduate curriculum? Can we really give the broad pregraduate level training in 4 years, before students begin specializing in graduate school?

Those of you in industry or private business could make a tremendous contribution to promoting horticulture by increasing the

number of internships you offer, or by acquainting students with your business and encouraging them to become horticulturists.

Opportunities for outreach

Who will spread the outreach message about horticultural science, its teachings and research findings to the user community? Each of us could do that! The good news is that we have a larger audience than we have had before. The bad news is that we have fewer extension specialists and fewer county agents trained in horticulture. We have fewer independent horticultural businesses/industries, partly as a result of merger and conglomeration. Horticulture needs more public exposure. Who is better known in your city—the head of the Horticulture Dept. or the person that writes the garden column in the local newspaper? Who knows the most about horticulture? Invite the press to come out and see what you are doing. Be aggressive! Don't wait for the radio shows and the press to contact you. Participate in public talk shows.

Who is going to fund horticulture? The good news is that there will be millions of dollars available in agricultural research, education, and outreach support. The bad news is that horticulture is not always getting its share. And will there be support for applied and problem-solving research of a horticultural nature? Only if we are successful in telling our story to local, county, state, and federal officials.

Who will represent horticulture in Congress? The good news is that we still have 435 representatives and 100 senators in the U.S. Congress. The bad news is that only a small fraction of them have a background in agriculture, to say nothing about horticulture. Each of us must help educate these federal legislators as well as our state and county governments. Invite them to departmental functions, field days, symposia, workshops, and seminars on nutrition, food safety, and protecting the environment. Talk to them about the contributions horticulture can make to solving some of today's problems. We have scientists who are playing prominent roles in molecular biology, space science, stress physiology, integrated pest management, low-input sustainable agriculture, and water quality. Who can make larger contributions to the studies of increased greenhouse gases and global warming than horticulturists? It is right down our alley. Are those of you in industry who practice integrated pest management and sustainable agriculture talking about your successes and contributions in the areas of agricultural chemical usage, irrigation scheduling, pest scouting, food safety, and the development of disease-resistant cultivars? If you are not, then you are missing a great chance to help our cause.

Who is going to tell consumers about the contributions horticultural science makes to them? We have never had such a health-conscious society as we have today. Most of you have noticed that a major fast food concern

has recently substituted carrots for cheese in their salads. This new nutritional awareness should be welcomed by all professional horticulturists. We need to tell "our story" and talk about our contributions to the betterment of nutrition for both body and mind. We have never had such an opportunity to perform, even show off, for the environmental organizations. Acre per acre, horticultural crops use as many agricultural chemicals as any branch of agriculture. We have a wealth of new listeners to convince about our contributions to improved agricultural/horticultural practices. We have as much technology to transfer as any other professional society does. Can we deliver this message clearly? Only if we communicate and converse with and educate the general public and the policy makers. Who is going to convince public legislators that we are ethical in our pursuit of scientific answers? That we do follow the rules and believe in the code of ethics drawn up by Dr. Ed Ryder and approved by the Society at last year's meeting? That the guidance we offer in using the tools of biotechnology is safe, because we have done the science and have proven it safe? We can do this! It is a great opportunity!

The charge to communicate with the public, policy makers, and special interest groups is ours—all of ASHS—whether in the public or private arena; whether in academia or industry. We must conduct sound science, draw rational conclusions based on fact, extend these conclusions to our clientele groups and gain the public trust. It doesn't matter if the subject is agricultural chemicals, nutrition, integrated pest management, food safety, or biotechnology. The message is the same! Conduct sound science, reach sound conclusions, educate your audience, and win their confidence and trust.

Let me share a personal anecdote with you. Two years ago I went before a legislative subcommittee in my home state to seek allowance of continued use of Alar according to its label. Armed with science's best data and a brief, concise statement about our use of the chemical and the benefits of it, I felt confident in my message. But the legislators were not listening. They had heard movie stars tell of Alar's harmful effects. They were not willing to listen. The good news was that the opportunity to educate and extend was there. The bad news was that legislators did not want to be confused with the facts. Since that time we have invited some of these legislators to take part in our field days and to visit campus laboratories. We have also invited members of the opposition (mostly representatives from prominent environmental groups) to join our departmental and college advisory committees. The education process is well underway, is becoming successful, and these converts are among the most effective advocates that we have for our programs.

In the year 2000 when someone calls your university/department and seeks information and the name of a faculty member to participate

in a local television show on the therapeutic benefits of flowers and ornamentals; on the contributions of trees and shrubs in urban environs; the nutritional value of horticultural crops; or the kinds of pure science a horticulturist might be involved with, will there be anyone there to answer these questions or to respond on behalf of horticulture? Some of you will be there! Can you do it? There will be plant scientists on those faculties, and good ones too, but what about horticulturists?

Administrative leadership

I have some suggestions for those of us in university administration. Our Society, like all others, moves forward via new information and knowledge. Society in general uses these resources to reach and form decisions. Horticulturists make numerous contributions to these knowledge bases. We strive to conduct solid research programs and publish findings in recognized peer-judged journals, but we do not do a good job of communicating the value of the research to the general public or to the policy makers. Our system rewards scientists for communicating with each other. We also need to find a way to reward those who communicate to important audiences other than horticulturists. At our institutions, we need to address the linkages between agriculture, the natural resources, and the environment and to examine the ways to integrate and develop interdisciplinary activities. We must also find ways to reward those who conduct complex interdisciplinary programs. We need to bring the sciences outside of agriculture into our fold and recognize their contributions as was pointed out by President George Martin last year. World-class research institutions are hiring large numbers of narrowly focused scientists because they can get grants and keep research programs competitive. As administrators, we need to communicate with these scientists and cultivate our relationships with them.

Tenure deliberations do not always fully acknowledge the contributions of teaching, of outreach and/or interdisciplinary efforts of scientists. There is good evidence that rewards go to those with research publications before they go to teachers or to those who develop new courses. As administrators, we should provide leadership to correct this situation.

One last word about professional societies. They need to increase their involvement in explaining and relating science. ASHS, for example, communicates well with the agronomic tri-societies and fairly well with the food sciences, but I do not believe we are communicating enough with other societies such as ecologists and animal scientists and little, if at all, with the social scientists. Together we can be a much more powerful force for science than we can be if we act alone.

It is time for us to act as individuals. We need to tell people who we are, what we are doing, and why we are doing it. We need to communicate better to attract and retain