

# ASHS-2003: Planning for Our Bicentennial<sup>1</sup>

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ASHS President, 2002–2003

In 2003, ASHS celebrates its first 100 years of leadership in horticultural science with our Centennial Conference. The question of the day may be whether we will celebrate an ASHS bicentennial. Our next century will be even more challenging, scientifically and technically. Information exchanges and communications will be vital. The relevance of our scientific contributions will relate directly to the manner in which ASHS members interact with industry, with decision makers, and with all users of horticultural science.

Jules Janick, in his Centennial “Tex” Frazier Lecture, chronicled horticulture and horticultural progress, with emphasis on our first 100 years. Today I want you to focus with me on our next century: I will briefly address our rich history and will mention some of our horticultural science contributions that have led to major industry transformations in the past. I will recount for you some of the advances of your Society since we last met in Toronto. Then I will relate some of the challenges that I see for the second century of ASHS. Finally, I will suggest how we might deal with our future challenges by leveraging the science of horticulture ... and acknowledging the fact that “Everyone is a Horticulturist.” So, let’s make it easy for them to identify with the sources of the art and science of all things horticultural: ASHS.

Our future with horticultural crops depends on our ability to build on progress already made. These challenges for ASHS must be addressed, and the solutions must be properly packaged and marketed to national and international decision makers in language they understand best. We have a lot to do. We could think of my Presidential Address as your ASHS President’s 2003 Report Card, including suggestions for making the grade in our second century.

## Agricultural and Horticultural Advances in the Past 100 Years

1903 was an interesting year. Wilbur and Orville Wright made their brilliant manned flight at Kitty Hawk and changed forever the way the world traveled. The Ford Motor Company began mass production of affordable cars and other vehicles. Crayola began producing a variety of colored crayons for children of all ages. Bob Hope, one of America’s greatest entertainers, was born in the suburbs of London. Harley Davidson started producing everyone’s favorite motorcycles. The Tour de France was initiated, and so was the World Series. The American Society for Horticultural Science was also formed that year ... and a lot has happened since then. Today’s farmers plant highly bred cultivars, take care of the plants

with machinery functioning with computers and GPS guidance systems, use wireless networks to get advice from the World Wide Web, and compete in a global market with growers from Europe to Australia. The combination of hybrid crops, cheap fossil fuel-based farm chemicals, and mechanization has created a technological revolution in agriculture that has helped feed billions of people worldwide.

Advances over the past 50 years have been particularly rapid and sweeping. Recently, members of the North American Agricultural Journalists included the following developments as the highest priority news stories of the last half-century: hybridization and other crop improvements; genetically modified crops; James Watson and Francis Crick’s discovery of DNA’s structure; Norman Borlaug’s “green revolution”; the 1962 publication of Rachel Carson’s book, *Silent Spring*; the adoption of anhydrous ammonia; and increasing agricultural mechanization. All of these events have involved horticulture.

My personal list of significant horticultural science developments that have led to industry transformations over the past century includes: breeding techniques; improved disease and insect resistance; plant introductions, globally; introductions of new crops; improved diversity, leading to year-round availability of horticultural commodities; discovery and use of growth regulators; discovery of ethylene as a principal ripening agent for climacteric fruits and vegetables; discovery and use of controlled-atmosphere storage for prolonging quality of perishables after harvest; transportation advances, such as refrigerated vehicles; improved nutrition, flavor, durability, and handling of perishable horticultural commodities; improved processing and preservation techniques and methods; reemergence and expansion of organic production; and the use of plastics for greenhouses, irrigation, bed covers, and mulches.

As a postharvest horticulturist, I am concerned with fresh perishable products often produced far from consumers. One hundred years ago, freshness was a seasonal experience. Because of research and technology, freshness is now becoming a year-round daily experience in many parts of the world. For example, the discovery early in the 20th century of the role of ethylene in ripening led to dramatic alterations in the produce industry. Today, we manage well the postharvest life of perishable commodities harvested at their peak of development and transported in sophisticated packages and vehicles, and conditioned or ripened at their market destination. We, the consumers, are the willing beneficiaries of the research and development that make all this possible. In fact, we enjoy these horticultural delicacies year-round and often cannot tell what season it is by walking the aisles of the

produce sections of our supermarkets. The seasons of horticulture have been obscured by modern technology. These are some of the dividends of horticultural science research and development.

Equally as important as the technical progress we have made is the growing awareness of the importance of horticulture. Nowhere is this truer than in the international arena. In a keynote address at IHC-2002, Ismail Serageldin, director of the Library of Alexandria, Egypt, and formerly vice president of the World Bank and executive director of the Consultative Group of International Agricultural Research, described multiple links between horticulture and sustainable development. He said:

*[that] the demand for flowers, fruits and nuts, ornamentals, vegetables, medicinal plants, and herbs and spices is growing faster than other sectors of world agriculture; that much of the growth of the horticultural industry is occurring in the developing world, home to the bulk of humanity and most of the poor; that new technologies, knowledge, institutions, and policies relating to horticulture will empower producers to tap into potentially lucrative markets; that horticultural plants and plant products contribute enormously to the diet and health of humans everywhere.*

*And most important is the understanding that horticulture contributes importantly to income, livelihoods, and diversification, and is well suited to small holdings and family enterprise in the developing world. Horticultural crop production is appropriate for small-holder farmers using family labor. It is about high-value crops managed intensively to achieve replicable results. Horticulture is eco-friendly when practiced with sound management. Fruits and vegetables contribute to a healthy diet. Herbs and spices add interest to our food, and the international demand for medicinal plants is increasing every year. Flowers bring joy to our lives. Clearly, horticulture has multiple roles to play in building a better tomorrow.*

As we work together to achieve Dr. Serageldin’s vision, I believe that our Society has an invaluable leadership role.

## Our Centennial Year

As we enter our second century, we can look back with pride on our recent successes. Our investment in our last ASHS Annual Conference, a joint venture with the spectacular International Horticultural Congress in Toronto, paid exceptional dividends and we were, indeed, richly rewarded. The breadth, depth, and relevancy of horticultural science were amply exemplified during IHC2002: “*Horticulture: Art and Science for Life.*”

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We also made progress as a result of an in-depth, online survey conducted by our Continuing Strategic Planning Committee. Early in 2002, ASHS members gave their feedback on virtually every aspect of our Society. The leadership listened and, a year ago, we initiated changes necessary to ensure our continued fiscal soundness and success.

Through responsible adjustments of our dues structure, we converted the best deal in town into a solid value for all ASHS members. What had already been a sound professional decision for horticulturists became an outstanding investment in the future. In addition to all of the current benefits of basic ASHS membership, the increased revenue was invested in even more ASHS member benefits, including an online member-only searchable database (online membership directory), online nomination and application forms, and a secure e-commerce site for dues renewals, and purchase of ASHS products and services and annual conference registration. Our online peer review system became operational on 1 Jan. 2003 and has virtually changed the way we do business.

### Second-century Challenges for ASHS

While we have made good progress, we must continue to look ahead. I see several challenges and opportunities:

1. A good starting place is the critical importance of interacting with the private sector and promoting the contributions of ASHS to horticultural industries. Let's find ways to bring our industry partners into the mainstream of ASHS. As my North Carolina State colleague and vice president-elect of our ASHS Industry Division Barclay Poling, says, "*This is not the time for industry to be looking upon ASHS and its many quality programs from a distance.*" These are the primary users of the science of horticulture, and they have much to offer us as well. Jeffrey Norrie of Acadian Seaplants Limited says, "*Networking between industry representatives and researchers from other research and development organizations is a cornerstone benefit to being included in the ASHS family.*"

Our corporate members enjoy the mutual benefits of ASHS involvement, but there are many more industry entities that can and should be our partners as we deal with the challenges of our next century. These members are partners who are well-positioned to enhance the visibility of ASHS and the science of horticulture. These are the beneficiaries who can and will give due credit to ASHS for the science of horticulture. But, will they? In fact, where are they?

The value of this type of partnership is evident in a unique opportunity for academic engagement with industry. For the past two years, the United Fresh Fruit and Vegetable Association, an ASHS corporate member and corporate sponsor, has invited ASHS to co-host the ASHS University Pavilion (Educational Showcase) at its Annual Produce Business Conference & Expositions. When United celebrates its Centennial Convention

in Chicago in May 2004, we hope to again co-host the ASHS University Pavilion. This will be United's first joint convention with the Food Marketing Institute. As a reminder: All interested colleges, universities, and agencies are encouraged to showcase their horticultural science programs through this industry-academia partnership offering complimentary conference registration and exhibit space.

2. While we need to engage industry, we also need to reach out to young horticulturists. Organizations like ACB and the National Junior Horticultural Association deserve our strong support. These outstanding young horticulturists have a passion for horticulture and often convert their interests into professional horticultural careers. Many of them become active and productive ASHS members. They represent our Society's future and deserve special consideration as we look ahead.

3. At the same time, we should be active participants in the public debate on research and science as it affects agriculture and horticulture. It will always be important for us to be present at the table. The Council for Agricultural Science and Technology (CAST) represents us well, and we need to continue to take a leadership role in that society. Whatever it takes, we must engage the decision-makers. This is not something that we in ASHS can treat casually nor relegate to a low priority, nor assume that someone else will do this for us.

4. It will also be important for ASHS to anticipate and respond to many changes related to horticulture in this new century. Richard L. Sawyer is the founding director general of the International Potato Center in Lima, Peru, and is here today. Dick reminds us: "*new diseases are already appearing and the major flexibility that exists in horticultural crops to adjust to these changes exists untapped in much of the world.*" Horticultural crops have a tremendous range of flexibility, from tree fruits to vegetables that will grow from the heat of the jungle to the cold of the polar regions. Up until now, we in the "global village" have turned mainly to extensively produced crops, such as the cereals, to feed people. The time has come for similar attention to be given to more intensively grown horticultural crops and to explore not just the range of climates in which they can be produced, but also their variability and nutritional quality. ASHS should be leading such efforts.

5. How about home horticulture? Natural resources are being exhausted in many areas, and this trend will continue for years ahead. We must anticipate and respond to this trend and others that affect horticultural science. This includes increasing production of local fruits, vegetables, and flowers. My North Carolina State colleague Will Hooker stated in our local newspaper this past July that: "*we could produce a third of what we want in home gardens, taking out all that energy invested in transporting perishables long distances.*" If we aren't always able to produce our own garden freshness, we can support those local growers who produce horticultural crops nearby. Horticultural crop producers, from home gardeners to corporate farmers, always have and always

will need the science of horticulture.

6. Everyone knows that edible horticultural crops are healthy. I think that we have a responsibility to partner with the Produce for Better Health Foundation in its promotion of the increased consumption of fruits and vegetables. Its 5-A-Day campaigns over the past decade have succeeded and been translated into several languages and cultures to be used around the world. Such responsible efforts contribute significantly to the improvement of human health and related critical needs, such as fighting the obesity epidemic in America.

7. Horticultural scientists also have an important role to play in continuing to develop more consumer-friendly horticultural products. The small watermelon and the cut fresh fruit and vegetable industries are good examples.

8. As we address these external challenges, I believe it will be healthy for us to look internally at the division structure of ASHS. Working Groups unite those of common interest. Acknowledging that our Working Groups are the heart and soul of ASHS, we would like our membership to consider with us options that will: 1) leverage the strength of these unique special interest groups; 2) facilitate their operations and interests; and 3) empower them to play more prominent roles in ASHS.

9. We also need to consider carefully how and who we serve in the future. This will define us as an organization. As we consider the future of ASHS, let's not underestimate the importance of: 1) who we are; 2) who we want to be; and 3) who we want to serve (in addition to our more traditional members). We need to customize our strategic plans to focus on both nontraditional and traditional member groups. Are we willing to consider new and complimentary membership categories, such as county extension agents, community college faculty members, Master Gardeners, and horticultural field representatives, to mention a few possibilities? ASHS has the responsibility of building on the strengths of our past century of creating and serving the science of horticulture.

### Dealing with Our Challenges by Leveraging the Science of Horticulture

One of the best things we can do to build on our past is to make sure that more people know and understand the importance of horticulture and horticultural science.

Horticulturists must deliver their messages to decision makers, nationally and internationally. In 1990, ASHS sponsored a Congressional Science Fellowship, and I was honored to be selected as our first ASHS Fellow. That truly unique opportunity represented a compelling challenge to me. My colleagues questioned my judgment for even thinking of competing for such a totally different position. To me, this represented an option to break the cycle of preaching to the choir. I was convinced that we horticultural scientists needed to do more than just talk mostly among ourselves about our needs for advocacy and support for funding of our favorite initiatives. We needed to grow beyond our annual gathering of tribes and to engage non-horticulturists in our dialogue.

I felt very strongly that we, as horticultural scientists, needed to relate more effectively to our constituents, especially this important decision-making body, the U.S. Congress.

Spending a year on the Hill certainly was a radical departure from the life of most mid-career horticultural scientists. In fact, this was an adventure that I sometimes refer to as my midlife crisis. I not only survived my own version of Potomac Fever, but it turned out to be a life-changing experience. Many of the lessons I learned that year as a technocrat among bureaucrats—partially funded by ASHS—have come into play in my professional and personal life and career over the past decade. This past year as your president has been an extension of that significant learning experience.

A year ago, Tim Ng from the University of Maryland also had a chance to go to Washington as our representative to the Stakeholders Workshop of the Cooperative State Research, Education, and Extension Service (CSREES) of the U.S. Dept. of Agriculture. In preparation for this workshop, your ASHS leadership identified significant research opportunities for horticultural scientists. These include:

1. Characterization of the impact of fruit and vegetable consumption on human health and well-being, with correlative attention focused on plant genetic modification, specialized cropping systems, postharvest physiology and technology, food safety, and public education to maximize the beneficial impact of fruit and vegetable consumption.

2. More attention to the field of “environmental horticulture” in its broadest dimensions, including study of the psychosocial value of human-plant interactions. Investigations should include landscape ecology on the micro-macro scale, restoration biology, and the environmentally sensitive management of home and urban landscapes. Identification and development of plants resistant to common pests to decrease use of chemicals by consumers will be important.

3. Ornamental horticulture, including nursery and greenhouse crop production, floristry, landscape design, construction, and maintenance, has been overlooked entirely by national competitive programs, except for minor elements that focus on integrated pest management or invasive species. Ornamental horticulture is the most profitable and rapidly growing sector of plant agriculture.

4. Sustainable cropping systems encompass many horticultural crops, and small- to medium-sized operations look to fruits and vegetables for economic success because of their high value per unit of land and resource inputs. These systems are economically feasible options for redirecting the “tobacco economy” into more socially acceptable production alternatives. The search for alternative crops and new uses for current crops should be accelerated. Increased attention should be focused on the needs of small full- and part-time growers, as the sustainable systems of the future likely will involve farming as supplementary rather than primary income.

5. The emerging field of controlled-environment agriculture (CEA) increasingly will

produce our salad, vegetable, and specialty crops as the 21st century progresses. Coupling this high-tech, “clean” horticulture with bio-derived, renewable energy sources will be the key to developing a profitable CEA growth industry that is sustainable and environmentally friendly.

The bottom line is that Tim came away from this workshop convinced that genomics research funding awarded primarily for work with agronomic crops must be extended to horticultural crops. Of all the crops receiving substantial NRI funding, only tomato was a horticultural crop. The first “true” horticultural crop receiving genomic funding was the *Brassica* group (which was far down the list). You may love biotechnology, or you may hate biotechnology, but biotechnology is here to stay ... and contribute significantly to resolving global hunger and poverty challenges.

As ASHS Congressional Science Fellow in 1990–91, I observed that legislation regarding agriculture does not always include horticulture. Tim Ng’s observations and reactions to this workshop confirm that we are not mainstream stakeholders. Nonetheless, I am still convinced that we must continue to be engaged in the funding process and aware of options. We need to be at the table when and where decisions are being made regarding funding opportunities that could affect our programs.

ASHS member Antonio Monteiro, from Portugal, in his recent analysis of the future of the International Society for Horticultural Science, made many observations that are applicable to ASHS. These include: enlarging the base of recruitment of new members and attracting people with different horticultural backgrounds; organizing new initiatives; and anticipating the changes in horticultural science. He points out that collective decisions involving the participation of the majority of members may sometimes be, surprisingly, against what some of us consider the most appropriate path—but they are always *the best option*. He notes that horticulture is a dynamic concept with soft borders with many scientific disciplines, subject matters, professions, and business activities. The survival of horticultural science will depend on our capacity to develop new fields of expertise and to enlarge our scope inside agribusiness. We must exploit this tension. *The day we are reduced to a minimal concept of horticulture, horticulture dies*. Above all, we must avoid the ghettoization of horticultural scientists. Opening the Society to the outside, increasing and renovating the membership, and watching for new scientific trends and modern information technology will surely bear good fruit in the near future.

Much of the success of our horticultural industry in the United States and around the world is based on the achievements of ASHS membership—you in this room today. Our accomplishments are sometimes featured in the popular press, local news media, and industry publications, such as *The Packer*. When and how do national publications, such as *The Wall Street Journal*, pick up on news of horticultural science? Much of what they report is obtained through ASHS, which ascribes appropriate

credit to member horticultural scientists and other contributors. Local media also feature our achievements, which are often picked up by news services, such as Associated Press, United Press International, Reuters, and others. It is important, therefore, for us to respond to media inquiries and to cooperate with the media in order to increase the probabilities of authentic information being published about horticultural science. In dealing with our media partners, it is also important for members to make the link with our professional society, ASHS.

### **As I said at the onset ... everyone is a horticulturist**

We are here to celebrate horticulture and horticultural science. We have horticultural products all around us: flowers and potted plants in our homes, shrubs and trees in our yards, vegetables and fruits in our gardens. Our refrigerator and pantry are stocked with fresh and processed fruits and vegetables. What has become commonplace for us as consumers is based on the contributions of our profession of horticultural science. I have concluded that everybody is a horticulturist. Let’s make it easy for them to identify with the sources of the art and science of all things horticultural. This more often than not involves linkages to ASHS.

Our predecessors have built a strong base over the past century. The task ahead of us is clearly to acknowledge appropriately our achievements and move on to even bigger and better things. The stage has been set, and we have our work cut out for us. Science will always be basic to everything horticultural. Horticultural industries everywhere are continuing to depend on ASHS for leadership and innovations. Meanwhile, modern Internet and distance learning technologies and systems are continuing to alter how and where we do business. Our clients and audiences are limitless. The vision of horticultural science is the combined product of our proud past and our ever-challenging future. Let’s share this vision together and with all horticulturists—which includes everyone.

We cannot even imagine some of the horticultural science products 100 years from now. There is a very high probability that changing demographics and changing foods will change how we operate as the leaders of the science of horticulture. Could tomato serve as a source of a vaccine? Will we have flowers in our gardens that change color during the day? Will blueberries really slow aging in humans ... who may be living to be 120 or more? Will potatoes be a significant source of protein? Will our CSHS friends have a Citrus Working Group because of Canadian citrus producers’ needs?

It has truly been a pleasure and a privilege for me to serve the American Society for Horticultural Science. Being president of ASHS during our centennial year has been a humbling and satisfying experience. Thank you all for your confidence and support as we begin preparing for our ASHS Bicentennial. Meanwhile, enjoy together the remainder of ASHS-2003: our Centennial Conference!