

1. MOVING TOWARD A NEW MILLENNIUM IN PEOPLE-PLANT RELATIONS

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ABSTRACT

As we move into the 21st century, we are faced with a challenge to ensure the quality of life for many generations to come. People widely recognize the value of plants. However, this is often as an abstraction to be addressed by environmentalists protecting the tropical rainforests, not as a daily duty and pleasure for each of us. Our job is to bring that abstraction into the homes of individuals around the world. Through research, we must document the essential role of plants in our daily life and identify and describe the optimum types of plants, their configuration in the landscape, and methods of caring for these plants to gain the greatest benefit to each person regardless of age, sex, disabilities, cultural, or geographic differences. Horticulture has long addressed the production plants for their numerous benefits to people. We must apply that same quality of research to understanding the role of cultivating a garden in human health and well-being. The questions have multiplied many fold over the last 10 years; we must find and share the answers and inspire others to join us in this endeavor.

Keywords: people-plant relations, people-plant interactions, marketing, market value, profitability

INTRODUCTION

The idea of moving into a new millennium is almost mystical in its powers over the imagination. It goes beyond a feeling of starting over with a clean slate that we often associate with the a new year. The millennium represents a cataclysmic shift to the future. Nothing will be as it has been. We are permeated by the feeling that society will be rocked on its foundations and that we must find a way to stabilize ourselves and those around us to understand and cope with the changes that are coming. Looking back over the last century reinforces this feeling of anticipation/dread/elation/fear. Societies throughout the world have changed from rural agrarian people surrounded by nature and involved in the production of basic necessities; to space travelers dependent on others for all of our human needs.

This transition has brought wealth and luxury beyond the imagination of kings to great masses of urban dwellers. But it has taken from us the evolutionary element that both designed and defines our humanness - our daily dependency on Nature. Predicting where the future will carry us is futile as we are only beginning to explore space travel, bio-engineering, and information technology. Where we can go or what we can create shifts daily; however, who we are as human beings and what we need to feel complete is written in our genes by the Mother that nurtured us in our slow development (I hesitate to use the word maturation) over endless millennia. Progressively research is documenting and quantifying what humans have known since before we planted the first seed. We are bound to the plants and soil of earth, a bond that feeds our bodies, fills our lungs, calms our emotions, enlightens our minds, and nurtures our spirits. We, as people, are only as healthy as our relationship with plants.

People-plant relations encompasses an enormous range of potential interactions from the geo-political implication of the management of the rainforest to the building of a terrarium. Each individual and each group of individuals working together must focus on those elements of this interaction to which they can best make a contribution. To understand the goals and thus the role of the People-Plant Council it is useful to look at how it came into being and where it has come in its first eight years. We can then explore where it might move in the future.

The term "people-plant interaction" has long been used by Charles Lewis since the early 1970's to describe the psycho-social benefits of plants in the urban environment. This outlook is summarized in his book *Green Nature, Human Nature*. As urban foresters developed insight into the environmental and visual value of urban trees, Lewis called for horticulturist to join in the search for knowledge and understanding of the role of all urban plants, a call unheeded by most. In support of Lewis' mission to open the eyes of horticulturist to the good that they could do to by pursuing the human benefits of urban plants rather than simply the production of plants, and in conjunction with my efforts in the field of horticultural therapy (HT), in 1989, I called a meeting of the executive directors or other representatives of numerous associations representing the horticulture community of the USA. (see Fig 1.) to discuss the value and potential of pursuing this research arena. The bottom line question was "If we support this effort, what's in it for us beside a warm feeling?" The answer, "The best marketing tool that you could ever get. Our products and services are actually good for people and can, indeed, make them healthy, wealthy, and wise." These farsighted people who could understand the value of marketing as it relates to both industry growth and profit (and this difference will be discussed later), agreed to support the initiative. The first national symposium, *The Role of Horticulture in Human Well-being and Social Development* was sponsored by Virginia Tech in 1990. A meeting of the leaders of the horticulture community held on the following Sunday, Earth Day, resulted in the formation of the People-Plant Council, as a non-dues membership, collaboration of existing horticultural associations formed for the purpose of encouraging research and the communication of that research to link horticulture to human health and wellbeing (Figure 1). The ultimate goal of the PPC is to increase the visibility and value of this area of research to the extent that it will become an integral part of the mission of all horticulture associations; thus, the PPC will become redundant and can disband. Significant progress toward this goal has been made (Figure 2); however, realistically, efforts are just beginning to be recognized and work must continue for many years. Most importantly though, we must all recognize that momentum is growing and our goals can and will be met.

Among the indicators of success that I would like to cite are the increase in researchers in this field, the international recognition and support, the committed activity of working groups and committees in various associations addressing this effort, the increase in shared knowledge brought about to a great extent by symposia such as this one and the publication of their proceedings, and the renewed interest by the industry in this area. After the first few years when they failed to receive immediate market value, they drifted away from their support, but interest is returning as seen by invitations to conduct training sessions at industry meetings, funding of research proposals, and articles in trade publications. In predicting the new millennium, I believe that the support of the industry is pivotal to our meeting our research goals and to their meeting their growth and profit goals. Before we explore the implications of this interdependency, it will useful to discuss some other terms and concepts.

Figure 1. The People-Plant Council Mission and Strategy

The People-Plant Council (PPC) was formed as a result of the national interdisciplinary symposium. *The Role of Horticulture in Human Well-being and Social US Development*, held in 1990. The mission of this Council is to document and communicate the effect that plants and flowers have on human well-being and improved life-quality. It is carried out through a three-part strategy focusing on the psychological, sociological, physiological, economic, and environmental effects of plants on people:

communication - maintaining an interdisciplinary network among researchers, funders, users, and Council affiliates.

research- encouraging cooperative efforts to identify research priorities and establish interdisciplinary research methodologies.

public awareness - encouraging the use of horticulture for enhanced life-quality based on research findings.

PPC is not a membership organization, rather a link or affiliation between organizations. Affiliation is open to all organizations within the horticulture and social science communities and allied or interested organizations to include, but not be limited to: academic and professional associations; trade and commercial associations; and volunteer, civic, amateur, and concerned groups. For information on affiliation, write to Dr. Diane Relf, People-Plant Council, Office of Environmental Horticulture, 407 Saunders Hall, Mail Code 0327. Blacksburg VA 24061.

Activities of the People-Plant Council

Presentations on the link between horticulture and human well-being given at trade and professional association meetings, including the American Association of nurserymen, Society of American Florists, American Society for Horticultural Science, American Horticultural therapy Association, and American Association of Botanical Gardens and Arboreta.

Sponsorship of national and international symposia on People-Plant Interactions.

Coordination and solicitation of research papers for journals, such as a special issue of the ASHS publication, *HortTechnology*, on Human Issues in Horticulture.

Benefits of Supporting PPC

By supporting the People-Plant Council, you will ensure

- an increase in the use of plants in all areas of modern life
- expansion of the research basis for human benefits from plants and flowers
- an increase of information for communicating the value of both active gardening and the presences of plants in public, commercial, and residential settings
- access to researchers with knowledge about the value of people-plant interaction
- improved quality of life and human well-being

PPC accepts contributions to support its goals. Contributors include commercial horticulture businesses, public relations and consulting firms, foundations, endowments, and individuals who have a commitment to the mission of the Council and seek to support its goals and fund its operational strategies.

Researchers, educators, and others use the services of the People-Plant Council, including a quarterly newsletter, periodic update reports, access to computerized information, and conference/educational program registration with a cost-of-service fee. As this is not a membership organization, individuals can receive the PPC newsletter and other information by submitting their names to the mailing list.

Figure 2. People-Plant Council Accomplishment Report: 1990-1998

For its eight-year history, the People-Plant Council and its members have many accomplishments:

- establishment of research priorities in HIH and an increase in number of researchers students in this field;
- co-sponsored five international symposia: Arlington, VA, with Virginia Tech in 1990; East Rutherford, NJ, with Rutgers in 1992; Davis, CA, with the University of California at Davis in 1994; San Antonio, TX, with Texas A&M in 1996; and Sydney, Australia, in 1998.
- a symposium held at the International Horticulture Congress of the International Society of Horticultural Sciences (ISHS), August 1994, in Kyoto, Japan, and August 1998, in Brussels, Belgium;
- proceedings available from four symposia: 1990 symposium proceedings, *The Role of Horticulture in Human Well-being and Social Development*, published by Timber Press; 1992 symposium proceedings, *People-Plant Relationships: Setting Research Priorities*, published by Hayworth Press; 1994 symposium proceedings, *The Healing Dimensions of People-Plant Interaction* published by University of California Press; 1996 symposium proceedings, *People-Plant Interactions in Urban Areas*, proceedings published by Department of Horticultural Science, Texas A&M; 1994 ISHS symposium proceedings, *Horticulture in Human Life, Culture, and Environment*, in *Acta Horticulturae* No. 391 (available through International Society for Horticultural Science; K. Mercierlaan 92; 3001 Leuven, BELGIUM);
- the development of two annotated bibliographies on computer disc: one addressing People-Plant Interaction and related research from a broad perspective (1,542 citations), and one focusing on Horticultural Therapy (1,183 citations); as well as a listing of books on children's gardening;
- the production of two videotapes discussing aspects of People-Plant Interaction;
- AFE and HRI have expanded funding in this research area;
- two special issues of the ASHS journal, *HortTechnology* were published, focusing on Human Issues in Horticulture (1992) and Horticulture Meeting Special Needs (1995), and a third is planned on International Perspectives in Human Issues in Horticulture (1999);
- the development of this area into an official committee of the American Association Botanical Gardens and Arboreta, the expansion of activities in ASHS, and the inclusion into the USDA Research Priorities developed by Dr. Marc Cathey;
- the establishment of a mailing list of 1,213 U.S.A. and 213 international addresses; an electronic bulletin board, HIH-L;
- establishment of World Wide Web (www) pages, address: <http://www.hort.vt.edu/human/humam.html>.
- mailing of four newsletters per year from which information is printed in numerous trade and professional journals;
- establishment of the Working Group for International Collaborative Research to facilitate development of research teams around the world to address shared issues or areas of research under the umbrella of human issues in horticulture.

DEFINITIONS OF HUMAN ISSUES IN HORTICULTURE (HIH)

The researchers in the U.S. have been using the term Human Issues in Horticulture (HIH) to define the research area that we are pursuing within the global arena of People-Plant Interactions (PPI). There are several reasons for the choice of this term:

- it clearly describes the area we are focusing on, neither encompassing a much broader concept (PPI) nor limiting us to one specific group of people (HT);

- members of the horticulture community are accustomed to discussing production issues; so human issues may be easier to conceptualize than many other terms, particularly ones that are constructed from other words;
- other professional areas such as engineering and architecture have divisions that address human issues, thus our university research peers may be able to more easily grasp and support this concept; and,
- it fits easily within an economic model showing the relationship between human values and related issues and growth and profitability of members of the horticulture community whether their product is plants, services, or information.

Topics covered in the area of HIH are those that are focused on the human value and impact of plants and horticulture rather than on the costs of production. These topics include aspects of the somewhat more widely recognized topics of economics and marketing (which is still sadly neglected by horticultural researchers), farming systems, fruit and vegetable relationship to health, and environmental benefits and protection. But it also includes less recognized topics such as healing landscapes, horticultural therapy, school gardening, community gardening, garden design and maintenance preferences and perceptions, and other psycho-social issues.

A MODEL OF GROWTH AND PROFITABILITY FOR THE HORTICULTURE COMMUNITY

That all members of the horticultural community seek growth and profit can be seen by analysis and discussion of the following equations:

$$\text{Value} - \text{Cost} = \text{Profit}$$

Value is set by human perception and can be altered by numerous circumstance. It can be measured by the amount of money, time, energy, or thought that a person is willing to expend on a specific item, action, or idea. The values we are concerned with are as diverse as individual plants at a retail store or access to a botanic garden or park.

Cost is an actual quantity, that is set by the amount of money, time, energy, or thought that has been expended to produce a specific item, action, or idea in order that it can be made available to another. Altering cost requires preplanning and modification of inputs prior to execution. Costs apply to all horticultural opportunities from plant production to school gardening.

Profit is dependent on both the value and the cost of the item, action, or idea and is therefore highly variable. It may be measured in financial or emotional gain. A teacher may greatly value the impact of school gardening on her students and be willing to spend 10 percent of her time and classroom budget on this opportunity. But if the cost in her time runs into weekends and holidays, she may no longer receive an emotional gain or profit from the effort. If the cost of producing a plant for sale equals the value that is assigned to it by merchandisers or society, then the business is no longer economically profitable.

An Equation for the 20th Century

The application of the equation to agriculture (including horticulture) in the 20th century was directed at and/or resulted from above (who can define cause and effect in grand social changes?) the shift of people from the land to the city. The focus was, and continues to be, ensuring profit by reducing costs, thus allowing values to drop and shifting the application of resources used to meet formerly valued areas such as gardens and fresh food to new areas such as manufactured goods, services, and (in recent years) information/entertainment

Humans evolved in a condition where the highest value was placed on being in nature and collecting or producing food and physical needs from nature. The cost was tremendous in time and energy. The profit was the ability to feed oneself and one's family and the personal satisfaction of nurturing the life of plants, animals, and family.

Throughout the 20th century in the USA, with the support of the US Draft Agriculture research and Extension divisions, technology replaced the human inputs of time and energy in cost with chemical and mechanical inputs. This resulted in driving down costs, while simultaneously a multitude of factors (with emphasis on advertising and marketing by manufacturers of goods and services) shifted values away from agriculture, thus suppressing prices and minimizing profits in such a way as to greatly favor corporate agriculture over independent businesses.

The response by the agriculture/horticulture industry has been to turn continuously to the researchers and demand that they help increase profits by reducing costs still further. This has made the greens industry (especially bedding plants) the darling of the mass marketers. The "green" industry has worked so hard at reducing costs and thus suppressing value, that they have achieved the status of a third world country, prime for exploitation by mass merchandisers and giant chain stores.

And so the cycle continues-increasing size and total production to justify increased technology to reduce the labor and similar costs and still give a unit cost that will provide a margin for profit. This in turn demands that the producer caters to big retailers who can use the huge quantity of product as a popular and cheap draw to the store, which reinforces the devaluation of the plants.

A similar comparison can be drawn to the devaluation of fruits and vegetables in an economic model driven by reducing cost rather than increasing value. In the system based on "pricing low and just putting products on display," canned goods were cheap and people made do with them in order to have money for cold drinks and tobacco. With the price of fresh produce being higher, the higher quality, better taste, and greater nutritive value of the produce were forgotten. In recent years, focused marketing efforts are helping to turn this trend around.

An Equation for the 21st Century

The equation for the next millennium has not changed. But the application of that equation must and will change. The focus can no longer be on reducing costs but must shift to increasing value. Remember that value is a perception of worth expressed in a willingness to pay. A perception of value may be altered by fact or fantasy, an actual benefit (5-fruits and vegetables-a-day can reduce cancer), or an implied promise (using our tooth paste will make your teeth straight and white and you able to leap a tall building with a single bound.) Horticulture is in the enviable position of truly improving the quality of life for people, so implied promises are not needed.

What is needed is a clearer understanding of how and why horticultural products and services are essential to human health and well being, how working with plants and nurturing them can lead us to a more fulfilling life, what the role of plants is in community development, and many similar human issues in horticulture. Linked to this we need to know how to communicate this information to the public and to the individuals who make the financial decision on where to place private and public dollars. By influencing the users and the buyers of horticultural crops, services and information through educating them as to the real value of plants in their daily life, we will be able to counter the years of devaluing horticulture and establish a healthy growth based on sustainable profits for quality products.

This educational task is not as insurmountable as it may seem, as in most parts of the world we are less than 100 years removed from universal experience of gardens and planted landscapes. We carry a cultural ethic and a genetic program that includes daily exposure to plants and appreciation of fresh fruits, vegetables, and flowers. Only in the last 100 years have we been trained by our

educational and economic systems to be indoors in artificial light and air with walls and tools to focus our attention on the mundane duties of earning dollars to buy things that fail to satisfy something we never learned to name.

There is every sign that modern humans have not bought into this hi-tech version of life quality. Gardening is still the number one leisure time pursuit; theme parks and tourist sites have recognized the essential element of their landscape, as have retirement communities and many cities and towns; hospitals, hospices, and nursing care facilities are beginning to build healing landscapes and horticultural therapy continues to grow worldwide; school gardening is gaining support from teachers, volunteers, and the horticulture industry; community gardening is feeding low income and restoring dignity to besieged communities. But all of these are fledgling efforts, grass root attempts by dedicated individuals to bring people back in touch with the values that are part of our humanness. It will take significantly more effort by a wide range of people to redirect our focus and restore our values.

One result of the advances made in modern life through science and research is that major policy and funding decisions require research-based, quantified data to support them. So to make the changes I have described into a permanent integral part of modern life, we have tremendous work to do. Our tasks can be divided into several areas. First, we must gain the support of the horticultural industry for this shift in focus from cost reduction to value enhancement. They are the primary determinates of how horticultural research dollars are spent and how university and other government research positions are filled, and they make all of the decisions on the use of industry research dollars. It is through their support that we gain the "permission" and the funds to shift research priorities in this direction. At the same time it is critical that we also educate our peers and administrators at research centers to support this new focus. Change is difficult and threatening, but opens vast opportunities.

Second, we must seek outside support and partners for research funding and collaboration. The social science implications of this research open avenues of funding never considered by plant scientists and working with psychologists, sociologists, economists, and others to provide research capabilities not otherwise accessible.

Thirdly, we must continue to share our knowledge and skills, our research findings, and our research methodology as rapidly and consistently as possible and appropriate. This sharing needs to be not only with fellow researchers, but with the industry and other members of the horticulture community to ensure their continued support.

It is the role, then, of the horticulture community to use the information developed by HIH researchers to re-educate the buyers and users of horticultural products and services as to their true value, thus re-building the perceived value and widening the use of plants for human health and well-being.

We are currently hearing comments from USDA officials that we do not need more research on how to grow plants; we are already growing more than we can sell. We are also constantly getting requests for more research data on the importance of plants. People are demonstrating the value they place on urban plants. It is clear that the 21st century will focus on understanding and enhancing the value of "near-by" nature. We will have important contributions to make to ensure human health and well-being through access to horticulture.

REFERENCE

Lewis, C. 1996. *Green Nature, Human Nature*, Univ. Illinois Press Urbana and Chicago.