The People-Plant Symposium in Sydney, Australia was a great success! Watch for reports and abstracts in the next issue.

International People Plant Symposium  
July 19-23, 2000  
Chicago, USA

An international symposium addressing research, design, and therapeutic applications on the benefits of accessible planted spaces. The Chicago Botanic Garden invites you to attend the People Plant Council 6th International Symposium in Chicago. The Symposium will combine the biennial conference of the People-Plant Council with the first international forum on universal design of outdoor spaces and their therapeutic applications. The Symposium is of interest to landscape designers, architects and urban planners; healthcare and human service professionals; researchers in environmental psychology, horticulture, social science, and architecture; horticultural therapists; and educators and students in all of these disciplines.

The Symposium will be complimented with an array of tour options including the World Class Buehler Enabling Garden at the Chicago Botanic Garden.

More information available this fall at www.chicago-botanic.org.

In This Issue
- Upcoming Events
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- Publications
- Abstracts
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H.I.H. Web Site!
There is now another Human Issues in Horticulture web site. Visit it at http://webtutor.tamu.edu/students/Resendez/project/index.html and find out more about what’s happening at Texas A&M.

Plant and People Interactions
The International Symposium on Plant and People Interactions in the Human Health and the Quality of Life was held May, 1998 in Seoul, Korea. The Symposium was sponsored by the Korean Society for Plants, People and Environment. Speakers at the event included: B.H. Kwack, Department of Horticultural Science, Korea University; Diane Relf, Department of Horticulture, Virginia Tech; E. Matsuo, Faculty of Agriculture, Kyushu University; and, Ronald Wood, Department of Environmental Science, University of Technology. Proceedings were published. For more information: call: 02-3290-3044 or email: wksim@kuccnx.korea.ac.kr
Foregone Affairs

May 15-16
The 1998 Landscape Architecture Symposium at Dumbarton Oaks was held on May 15 and 16, 1998 in Washington, DC. The Symposium was devoted to the topic ENVIRONMENTALISM IN LANDSCAPE ARCHITECTURE. Environmentalism as a cultural movement has exerted a major influence upon developments in Landscape Architecture in the United States during the last 30 years. For more information call (202) 339-6460 or email: landscape@doaks.org.

June 6
National Gardening Exercise Day was June 6, 1998. State Garden Clubs across America encouraged their members to substitute the phrase “yard work” with “yard exercise!” Aerobic Gardening is different techniques that will help reduce back strain and muscle soreness that is so often associated with gardening. Jeffrey Restuccio, a nationally recognized author and speaker on the subject of gardening and exercise, suggests warming up your muscles before gardening, include a variety of movements in your gardening activities, and alternate your stance. These are great pointers that can be followed year round to reduce gardening stresses.
For more information contact your local State Garden Club Chapter or Jeff Restuccio at (901) 756-8586.

August 2-4
1998 Annual Conference of the American Horticultural Therapy Association was presented by the Rio Grande Botanic Garden and was held in Albuquerque, New Mexico. This event was an important educational event for horticultural therapists and focused on “Healing the Healer.” The conference provided a forum to discuss our concerns while focusing on important issues in horticulture as therapy.
For information call: (800)634-1603 or (505) 848-7148

August 26-29
The 1998 P.O.D. (Philosophy of Design) Symposium was held in Hocking Hills, Ohio, and was presented by the Whispering Crane Institute. The purpose of this symposium was to help landscape design professionals come to a better understanding of our myriad relationships with the land. There were several presenters who have made an important mark on the landscape design profession. The symposium was held in the awe inspiring and breathtaking hills of southeastern Ohio.
For more information contact The Whispering Crane Institute at (803) 356-3672.

Landscapes For Learning

For informative and current news in the world of environmental education, tap into the Landscapes for Learning newsletter.
The South Carolina Landscapes for Learning Collaborative is a multifaceted, multipurpose entity that promotes environmental education, service learning, environmental stewardship, and community strengthening through the creation and celebration of learning landscapes.
Membership is open to anyone who values ecological literacy, multidisciplinary endeavors, and both formal and nonformal learning.
To learn more about Landscapes for Learning contact:
Landscapes for Learning, Dept. of Sociology, 123 Brackett Hall Box 341513, Clemson University, Clemson, SC, 29634-1513, USA or e-mail: psaulni@Clemson.edu or vanmey@Clemson.edu.
Terence Cardinal Cooke Health Care Center will sponsor a lecture entitled **The Role of Restorative Gardens in the Healing Process**


Co-authors of *The Role of Restorative Gardens, The Healing Landscape*

**Thursday, October 8, 1998**

**6:00 p.m.**

**The Joel Schnaper Garden**

**Terence Cardinal Cooke Health Care Center**

**1249 Fifth Avenue New York City**

On that evening amid the serene setting of a restorative garden, a landscape architect, a physician, and a historian will offer their personal insights into the beneficial physiological effects of garden environments on patients’ well-being and why it is important to integrate nature into the institutional settings of health care facilities. There will also be an opportunity for questions, answers and dialogue about TCCCHC’s horticultural therapy program and a tour of the Joel Schnaper Garden.

A cocktail reception and book signing will immediately follow the lecture.

**R.S.V.P. by October 2nd to Peggy Di Russo or for further information, please call 212-360-1095**

The Joel Schnaper Garden, a healing garden for people with AIDS, is supported in part by TCCCHC and by revenues from plant sales. It is dependent on charitable contributions to cover the balance of operating, maintenance and program costs and actively seeks donations to ensure long-term support.

### Journal Articles


Abstract: A nutrition education-through-gardening program was conducted to encourage dietary behavior change and to promote psychological well-being among seniors. The model is based on psychosocial theories of perception of control and social support. The five-month intervention consisted of weekly contact with the participants, with one bimonthly group meeting on nutrition, one bimonthly group meeting on gardening, and two individual visits at participants’

(continued on page 4)

### Books


Rachel Kaplan, Stephen Kaplan and Robert L. Ryan were able to share new ideas about natural areas and present effective recommendations for design and management through *With People in Mind.* This is a perfect resource for practitioners and students in landscape architecture, planning resource management, environmental psychology, and other fields.

**Contact:** Island Press, Box 7, Dept 2PR, Covelo, CA 95428; 800-828-1302.


Sean E. Michael and R. Bruce Hull present and summarize some of the major works on crime prevention effected through manipulation of physical settings, specifically vegetation in this publication. This bibliography is updated regularly and current versions are available from the authors in print and/or disk format.

**Contact:** Sean Michael or Bruce Hull, Dept. of Forestry, College of Forestry and Wildlife Resources, Virginia Tech, Blacksburg, Virginia 24061-0324.


*Plant Foods for Human Nutrition* (previously Qualitas Plantarum) is an international journal that publishes reports of original research and critical reviews concerned with the improvement and evaluation of the nutritional quality of plant foods for humans, as they are influenced by: biotechnology (plant breeding) cooking and processing ecology (plant and soil) plant nutrition (production practices).

Relevant papers on clinical and toxicological, and epidemiological studies are also published.

**Contact:** Kluwer Academic Publishers, Order Dept., PO Box 322, 3300 AH Dordrecht, The Netherlands. Tel. +31-78-6392392 Fax +31-78-6546474 E-mail: services@wkap.nl.

**Subscription Information**

1998, Volumes 53 (4 issues)

Subscription Rate: NLG 597.00/ USD 306.50
Journal Articles (continued from page 3)

homes each month. A raised garden box was provided for growing vegetables. The intake of food in targeted categories was encouraged through lectures, discussions, behavior self-monitoring cards, goal setting, and social interactions. Pre- and post-test measures of dietary behaviors and attitudes related to nutrition and to gardening were collected. The project was conducted at an initial location and then replicated in the second year at two other sites. Significant changes in the intake of food in targeted categories were noted at all locations and scores on attitudinal measures also improved among seniors at all sites. Similar changes in dietary behavior and attitudinal scores across the three programs suggest the appropriateness of this program for a variety of settings.

Address for correspondence: Robert M. Hackman, 250 Esslinger Hall. University of Oregon. Eugene, OR. 97403-1273, USA.


Abstract: One hundred twenty elementary school children in Minnesota were given cameras for one school week and instructed to photograph their outside world. The children represented four different grade levels and three population regions: urban, suburban and rural. This study is an alternative to the photograph evaluation surveys given to adults or children, and provides insight into a child's view of the urban forest. A high percentage of the photographs from all regions and all grade levels included trees. Children from urban areas photographed fewer playground scenes than did suburban and rural children. Younger children photographed more people and playgrounds than older children did.


Abstract: Numerous projects conducted in various settings have supported the thesis that nature activities aid in the development of self-concept, self-confidence, and level of achievement. The nature activities described in this article were designed to cultivate the hospitalized children a sense of wonder about their world and to involve them in sensory experiences that would aid them in adjusting to their hospital experiences. As a unit, these experiments provide a comprehensive approach to therapy for the hospitalized child and add a positive dimension to the child life program.

Harvey, Margaret R. *The Relationship between Children's Experiences with Vegetation on School Grounds and Their Environmental Attitudes*. *Journal of Environmental Education*, 1989-90, 21(2).

Abstract: The school landscape can be a teaching resource for botany and environmental education. This inquiry evaluates the impact of the landscape upon children at 21 junior schools in England. Past and present experiences of 8 to 11-year-old children (N=845) with vegetation, their botanical knowledge, and their environmental dispositions were measured. The results indicate that both past and present experiences make a small but significant contribution to the children’s development of botanical knowledge and environmental dispositions.

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**Thesis Abstracts**

Song, Ji-Hyun. 1997. *An Experimental Study on the Effects of Horticultural Therapy With Special Reference to the Negative Symptoms of Schizophrenia*. Graduate School of Korea University.

The objective of this study was to verify the effects of horticultural therapy program on schizophrenics with negative symptoms. SANS (Scale for the Assessment of Negative Symptoms), Evaluation from Patient Interaction and Participation Scale and a self-report of every program were used to measure the subjects’ changes in negative symptoms and their responses to the horticultural therapy program over time. SANS consists of 24 negative symptoms (items which reflect global negative symptoms) which can be categorized into 5 symptom dimensions (i.e, affective flattening or blunting, alogia, avolition-apathy, anhedonia-asociality and attention).


Public housing provides affordable housing for low-income families. However, the physical and social conditions have deteriorated since its inception, resulting in housing environments that are isolated and disconnected from surrounding neighborhoods and often plagued by crime and violence. This study explores opportunities for enhancing residents’ sense of ownership, control, and efficacy through the redesign of outdoor spaces at the Fulton public housing development in Richmond, VA. Residents participated in a design process that produced a Conceptual Landscape Master Plan based on their preferences, and a set of guidelines and recommendations for the implementation and maintenance of the proposed external spaces of the Master Plan.

The study presents design objectives and criteria addressing public-private spatial delineations, public space, pedestrian and vehicular access, development image, and safety considerations. These objectives and criteria were used to evaluate design options and to generate two design concepts from which the residents selected appropriate design solutions.
for their housing development. The study concludes with the presentation of a preferred Conceptual Landscape Master Plan. The plan presents a hierarchy of public-to-private spaces, clear delineations of semipublic and semiprivate spaces, and the location of active and passive public recreational spaces. It also addresses the legibilities of pedestrian and vehicular access, circulation, and parking, as well as safety issues such as natural surveillance, access control, and territoriality.

The participatory process guided the redesign of the Fulton public housing site, and also provided an understanding of the underlying social conditions that significantly impact the residents and their use of space. The preferred landscape design reflects the residents’ needs, concerns, and wishes, and creates opportunities to foster interaction and involvement among the residents and surrounding communities.

Abstracts

From HortScience Volume 33, Number 3-Presentations given at 95th Annual International Conference of the American Society for Horticultural Science, June 1998

Vegetables and Human Health


Antioxidants have been associated with reduced risk of cardiovascular disease and several types of cancer. Recent studies indicate that cruciferous vegetables contain high levels of these antioxidants. We assayed the edible portions of 52 broccoli and 13 cabbage, kale, cauliflower, and Brussels sprouts genotypes to determine variability of alpha-carotene, beta-carotene, alpha-tocopherol, gamma-tocopherol, and ascorbate within and between varieties of Brassica oleracea. Emphasis was placed on broccoli due to its economic importance and consumer preference. Samples of each genotype in replicated trials were harvested at fresh-market stage, frozen immediately in liquid nitrogen, and placed in -80 degrees Celsius. HPLC with an amine column was used to measure ascorbate in fresh, frozen samples. Tissue for carotenoid and tocopherol analysis was freeze-dried prior to extraction. Carotenoid and tocopherol concentrations were simultaneously measured using a reverse-phase HPLC system developed in our laboratory. Results indicate that there is substantial variability both within and between varieties. Kale had the highest levels of these compounds, followed by broccoli and Brussels Sprouts with intermediate levels, then by cabbage and cauliflower which were relatively poor sources. Based on dry weight, broccoli heads ranged (in mg/g) from 0-2.9, 23-94, 24-222, and 2-5 for alpha-carotene, beta-carotene, alpha-tocopherol, and gamma-tocopherol, respectively. The range of ascorbate was 54-120 mg/100 g fresh weight. These results contradict the general perception that all broccoli lines are equally beneficial in potential disease prevention. The information gained from this study can be used to help consumers select foods that promote a healthy life-style and in breeding programs to develop new germplasm that will enhance the antioxidant potential of our food supply.

Childers, Norman F. and Michael S. Margoles. Relation of Nightshades (Solanaceae) to Arthritis. Horticultural Sciences Dept., Univ. of Florida, Gainesville, FL 32611; Arthritis Nightshades Research Foundation, 177 San Ramon Dr., San Jose, CA 95111-3615

Diet appears to be a factor in the etiology of arthritis based on surveys of more than 1400 volunteers during a 25-year period. Plants in the drug family, Solanaceae (nightshades) are an important causative factor in arthritis in sensitive people. This family includes potato (Solanum tuberosum L.), tomato (Lycopersicon esculentum L.), eggplant (Solanum melongena L.), tobacco (Nicotiana tabacum L.), and peppers (Capsicum sp.) of all kinds, except black pepper (family, Piperaceae). A buildup of cholinesterase-inhibiting glycoalkaloids and steroids from consumption and/or use (tobacco) of the nightshades and from other sources such as caffeine and some pesticides (organophosphates and carbamates) may cause inflammation, muscle spasms, pain, and stiffness. Osteoarthritis appears to be a result of long-term consumption and/or use of the Solanaceae, which contain naturally the active metabolite vitamin D3, which in excess causes crippling and early disability (as seen in livestock). Rigid omission of Solanaceae, with other minor diet adjustments, has resulted in positive to marked improvement in arthritis and general health.

Leonard M. Pike. ‘Betasweet’, Carrot Designed for Flavour, Nutrition, and Health. Vegetable Improvement Center, 1500 Research Parkway, Suite 120, College Station, TX 77843-2119

BetaSweet is a new designer carrot that was conceived as a research project with the objective to create a new high-quality vegetable with unique characteristics. The gene responsible for purple or maroon color in carrots is a natural one and has been around for many years. Carrot breeders

(continued on page 6)
Betaseet (continued from page 5)

have discarded carrots that occasionally segregated to this color because orange has been the preferred traditional color. In 1989, three carrots grown from Brazilian seed were observed to have a blotchy maroon color mixed with the normal orange. Within two generations of breeding effort, I had obtained a few carrot roots with near-complete maroon exterior color and orange interior. The contrast of orange and maroon was very attractive in carrots cut as coins or sticks. The maroon and orange color would serve as the perfect way to identify and promote this new variety. Several additional generations were required using extensive laboratory testing for low terpenoids (strong carrot flavors), high sugars, high carotene, and crispy texture. Thousands of carrot roots were analyzed and selected for those qualities and for the dark maroon exterior and orange interior colors. The few best for those characteristics were intercrossed, and re-selected for their adaptation when grown under Texas climatic conditions.

Using the Web for Education


A teaching homepage was created on the World Wide Web at: http://www.hort.vt.edu/faculty/welbaum/hort4764 to teach an introductory college level course on vegetable crops. The homepage was designed to be viewed using Netscape software. Reading assignments and class outlines are formatted as .pdf files and can be viewed using Adobe Acrobat Reader. This software can be downloaded from the homepage. The homepage is linked to additional pages entitled: “Course description,” “Instructor,” “Text and other printed reference material,” “Class schedule and assignments,” “Class related pictures,” “Sample test questions,” “Chat room,” “Class project,” “Other web sites of interest,” and “Grading.” Two-hundred pages of text and outlines describing production of vegetables using plasticulture, vegetable seed technology, vegetable production under protective cover, and other topics as well as descriptions of 28 individual vegetables are available through the homepage. There are more than 500 pictures and descriptions of vegetables and vegetable crop production linked to this website. Students can be examined using a computer testing system called Whizquiz that grades and corrects each exam. A Chat Room allows discussion among students and the instructor. Discussion sessions can be conducted between students and guests at distant locations. Student term projects covering a range of subjects relating to vegetable crops are linked to the homepage. Links are provided to over 25 other World Wide Web sites with additional information on vegetable crops. This teaching homepage has been used for two semesters and students’ evaluation of the system will be provided.

Bhakta, Bindu R. and Daniel J. Tenessen. The Use of a Multidisciplinary, Culturally Rich Web Site by Youth and Formal and Informal Educators to Increase Appreciation and Awareness of Plant and Other Cultures. Cornell Univ., Dept. of Floriculture and Ornamental Horticulture, Ithaca, NY 14853

Throughout history, people have forged an intricate relationship with plants. As a result, ethnobotany, the study of this association between people and plants, has begun to receive great attention. Like ethnobotany, horticulture is a field of study that humans depend on to enhance and beautify their living and working environments. In order to promote the fields of horticulture and ethnobotany, a multidisciplinary, “plant-centered” web site about Asian-Indian ethnobotany was assembled. Novel or unique plants were used to promote exploration of multicultural experiences that reflected the increasing diversity in today’s formal and non-formal classrooms. The web site contained pictures, video and audio clips, experimental activities, links to other web sites, places to visit these plant specimens, and supplemental materials for individuals interested in conducting further scientific investigations. Seven ethnobotany units were developed: Vegetable Diversity, Healing Plants, Indian Staples, Sacred Plants, the Easel of Indian Textiles, Tastes of India, and Ceremonial Plants. Outreach programs were conducted in Ithaca-area schools and 4-H clubs to evaluate youth interest in the topics presented in the web site. This educational program allowed middle school students the unique opportunity to conduct a self-guided exploration of important Indian ethnobotanical plants, while gaining important and valuable horticultural experience in plant classification, structure, growth substances, propagation, and diseases. This program also provided important exposure for both youth interested in pursuing ethnobotany or horticulture as a future career and for those with no previous horticultural or ethnobotanical experience. In conclusion, this web site used a novel multicultural approach to allow youth to develop an awareness for plants in other cultures while cultivating appreciation of plants important in their own cultures.

Consumer Research


Plant quality has been identified as one of the most important factors in determining where retail customers shop and which plants they buy. A better understanding of what customers actually mean by “plant quality” can enhance the industry’s ability to give customers what they want, and
improve the competitive position of individual nursery/garden center businesses. Five common woody ornamentals—flowering dogwood (Cornus florida), red maple (Acer rubrum), azalea (Rhododendron spp.), nandina (Nandina domestica) and ‘Compacta’ holly (Ilex crenata ‘Compacta’) —were selected for a three-part study of consumer perceptions of plant quality. The first component of the study was comprised of three focus groups, conducted during Summer 1995 in New Bern, N.C., and Fall 1996 in Raleigh, N.C. The purpose of the focus groups was to learn more about the specific quality attributes customers use in evaluating trees and shrubs in the garden center. The second component consisted of five different intercept surveys conducted in 1997 and 1998 in Virginia, North Carolina, South Carolina, Florida, Georgia, Alabama, and Tennessee. Purchase intent, rank order, paired comparison, dollar metric and constant sum scales, accompanied by photographs of plant material, were used to interview retail customers in independently-owned garden centers. These studies focused primarily on azaleas and dogwoods. The third component was a hedonic study focusing on azaleas and ‘Compacta’ holly, conducted in Raleigh, N.C., in April 1998. Using standard regression analysis techniques, hedonics examines prices and levels of selected attributes to provide an estimate of the marginal implicit price a consumer is willing to pay for an additional unit of a particular attribute.


Consumer behavior research seems to play a big role in determining the wants and needs of an industry. This research helps to shape the way we market to the consumers and helps make marketing strategies more effective. In the 1950s grocery stores began to sell horticulture products in order to alleviate the grower’s surplus. Supermarkets now have seem to found their niche in this market due to the fact that they can influence their consumers to buy their flowers right along with their bread, and get all of their shopping done at once. This new type of sale, commonly referred to as the impulse sale, can relate directly to how well the store is merchandised and maintained. A study was conducted at a local supermarket, to determine the following: good locations for impulse sales items, special conditions affecting impulse sales items, and what types of things could affect demand for impulse items. It was discovered that certain locations make better sales than other locations. Locations that were front and center and allowed easy access to seeing the mixed flower bouquet without having to touch it yielded the best results. The variables used to show a change in demand showed little to some variability and has raised some questions which may be used to conduct future research.


Survey research is an important methodology for many horticultural science professionals. The need to describe, validate, or determine perceptions of various aspects of the field is necessary in order to look at the “big picture” associated with the horticultural profession. When survey research is conducted, several potential errors may occur that become threats to the external validity of the research. This presentation will address the common sources of error in survey research that should be addressed by the researcher and methods used to control each source of error. While quantitative survey methodology will be emphasized in the presentation, qualitative research methodology will also be addressed.

Human Stress


Evaluating human psychophysiological responses to plant visual stimuli provides a clearer understanding of factors within plant environments that enhance or maximize recovery from stress. Advances in physiological monitoring technology allow continuous recording and more-refined data collection of human responses to environmental stimuli. The objective of this study was to compare effects on stress recovery by exposures to geranium visual stimuli following an induced stressor, by measuring changes in physiological indicators and emotional states. One-hundred-fifty college students were randomly assigned to one of three treatment groups: red-flowering geranium, non-flowering geraniums or no geraniums. Each student viewed a 10-min film of a stressful human situation following a 5-min baseline, then was exposed to an assigned treatment setting during a 5-min recovery period. Continuous physiological measurements were taken of brainwave activities (EEG), skin conductance (EDR), and finger skin temperature. Self-rating scores of subjects’ feelings were taken using the Zuckerman Inventory of Personal Reactions. Comparisons among treatment groups will be discussed based on gender and other demographic factors.
Special Rate for PPC Proceedings

The 1994 Proceedings for the People-Plant Symposium will be offered along with the 1996 Proceedings at a reduced price of $50 per set. Send check payable to Treasurer of Virginia Tech.

Did You Miss Us?

Numerous people have asked if they were still on the mailing list or if they could have back issues for 1998. Unfortunately this is the first issue for 1998 - a second will be along soon.

Resources Available from PPC

BOOKS


COMPUTERIZED BIBLIOGRAPHIES $15 each.

People-Plant Interaction (1305 citations) and Horticulture Therapy (1184 citations) bibliographies are available on 3.5-inch, DS/HD diskettes containing the citations in WordPerfect 5.0. The material also can be ordered on 3.5-inch diskettes as DOS text files. Updates - return original diskette and $5.

VIDEOTAPES $15 each.


2) The Art of Rhonda Roland Shearer.

**** All prices include shipping and handling. Make checks payable to Treasurer, Virginia Tech.****

The purpose of this newsletter is to increase people-plant interaction awareness. Please share its information with others through your newsletters, magazines, etc. This newsletter is free. Send your name and address to begin your subscription.