

BETTER LAWN - HARVESTS

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ANNUAL MEETING ELECTS OFFICERS, TRUSTEES

The June 29 annual meeting of the Better Lawn and Turf Institute, held at the American Seed Trade Association Convention, Marriott Hotel, Los Angeles, elected the following officers and trustees for fiscal year 1976-77.

Doyle W. Jacklin, Jacklin Seed, WA, President
Gordon J. Miller, Stanford Seed, PA, Vice President
Robert J. Russell, J. & L. Adikes, NY, Secy.-Treas.

Ross Allmon, Hercules, DE; Richard Bailey, Merion Bluegrass, OR; Robert Buker, FFR Cooperative, IN; James Carnes, International Seeds, OR; Alan Hick, Northrup, King, OR; James Jenks, Jenks-White Seed, OR; Robert Lierman, Highland Bentgrass Commission, OR; Peter Loft, Loft's Pedigreed Seed, NJ; Edward F. Mangelsdorf, Mangelsdorf & Bros., MO; Robert Peterson, E.F. Burlingham & Sons, OR; Robert Richardson, Willamette Seed & Grain, OR; Norman Rothwell, Norm Rothwell Ltd., Canada; E.R. Townsend, Whitney-Dickinson, NY; William Kent Wiley, Jr., Pickswed West, OR and John Zajac, Garfield-Williamson, NJ. were elected trustees.

ANNUAL MEETING ACTIONS

The minutes of the Lawn Institute Annual Meeting of Tuesday June 29, 1976, were recorded by Secretary Robert J. Russell, and will constitute the official record in his files. The Director's report on activities for the year is reproduced in full in this issue of Harvests as a separate item. President Jacklin's comments are also included separately, as read by Vice President Miller in the absence of Mr. Jacklin (who was called home upon death of his mother). Also reported separately is Dr. Pepin's report as Chairman of the Variety Review Board.

The "Badge of Merit" awarded to former President George Osburn was cited, and Mr. Osburn's gracious reply read into the record. Mr. Zajac commented upon the short sales season for seed, especially in the Northeast, and wondered if the Institute could be helpful in countering publicity that often suggests it is a waste of time to plant lawns other than during a few favorable weeks (with modern varieties such as perennial ryegrasses, and chemical aids such as siduron, season-long planting can be successful). A silent prayer was offered in memory of Mrs. Jacklin, and a contribution to the American Cancer Society in her memory authorized.

Upon termination of the general meeting and convening of the new board, these actions received attention: official "acceptance" of Citation, Game and Omega perennial ryegrasses; Enmundi Kentucky bluegrass; per recommendation by

ANNUAL MEETING ACTIONS (continued)

the Variety Review Board. A vote was taken on the newly initiated "Award of Merit", from a list of candidates reported out by the Hick committee (the confidential ballots to be tabulated by President Jacklin, and results revealed at a later date).

Changes in membership classification were suggested by the Miller committee; discussion ensued, with final action to be taken by the Executive Committee after a period of "digestion" in case any refinements are needed. Chief changes suggested are: Separate categorization for all species (kinds), such that a fescue, for example, cannot be a "second variety" behind a "first variety" bluegrass. "Seal of Approval" royalties, based on poundage, would be abandoned in favor of a flat fee (there was also discussion about new criteria, with a general feeling that at least 75% of the admissible components of a seed mixture should be Variety Review Board acceptances).

The Director was asked to recommend whether the Institute should participate further in the cooperative Lawn and Garden Supplement. This was voted affirmatively in view of the opinion that this constituted a different type of promulgation that did not duplicate to any great extent the Institute's own press kits. (At a separate meeting later in the day, the Lawn & Turfgrass Division of ASTA voted to continue its cost-sharing for this Supplement in the amount of \$800).

The status of the Marysville office, and its anticipated budget for the year, were reviewed and approved. The only significant budgetary addition is an increase in travel funds enabling the Director to attend and present a paper at the Third International Turfgrass Conference in Munich, Germany, July of 1977. The budget presumes no drastic increase in postal rates, or unforeseen capitalization of equipment.

The 1977 annual meeting would again be held in association with the ASTA Convention, in Louisville, Ky., late June, the exact time and meeting place to be determined.

EXCERPTED COMMENTS FROM MR. JACKLIN'S PRESIDENTIAL ADDRESS, ANNUAL MEETING, 1976

"I have a few short comments to make regarding my hopes for the future of the Institute. First, the Institute Badge of Merit program is established, the monetary guidelines have been set, and the Product Review Board has been appointed. It is now up to each and every one of us to make it work by attracting new members who will be an asset to the Institute program and the Institute an asset to the members of the marketing program. I can only borrow a phrase from George Osburn who said 'Good lawn care starts with good seed but does not begin or end there --- good turf needs many other disciplines and all those who have something to offer for good turf growth should share in the Institute's undertaking as well as profits'. ----

I had the good fortune to spend some time with the Hercules Company to discuss possible future programs for the Institute if funds become sufficient. I am thinking, for example, of radio and/or TV kits furnished through the media stations. We could even expand this program into development of exclusive radio or TV kits to particular stations. Another example should be feature stories in the form of pre-developed paper mats together with glossy pictures for newspaper garden editors. At the present time we don't have the staff nor the funds for this type of material. We rely on Dr. Schery's articles to be picked up by the

(continued)

editor which allows deletions and additions as he sees fit. Extension agent contacts could enlarge future promotion. Informative data about Institute products, together with variety and/or allied product charts for extension agents to refer to, could result in much indirect promotion with the homeowner. I can visualize the aggressive Long Island extension agents being able to do a bangup job.

We need more brochures featuring Institute varieties and products. These brochures should be full-color professional jobs informing consumers, editors, and others of the improved performance of the Institute representations. Additionally, we need a clearing house, whether it's in Marysville or through a hired public relation firm to receive inquiries from the public. The clearing house would mail specific information as requested, and even refer potential customers to available product. We need a more aggressive program in mailing out spot announcements, and informative slides or films to educational groups. This is being done in a very limited way, and although extremely successful, we have a great opportunity to do even more. I hope to see further improvement in Variety Review Board operations. The Board and its guidelines are excellent, but we must update our family of varieties so that we always are confident of quality, availability, and performance. ---- -

[Mr. Jacklin finished expressing his sincere thanks to all] - Doyle Jacklin

DR. PEPIN'S REPORT FOR THE VARIETY REVIEW BOARD, '75-'76

"Applications for Citation, Game, and Omega perennial ryegrasses, and Enmundi Kentucky bluegrass were approved by the Variety Review Board during the past twelve months. The VRB recommends to the Trustees that these be added formally to the list of approved varieties. [so voted]

Starting in July 1976, new varieties may be given 'conditional approval'. This category is needed to improve flexibility. Conditional approval would be granted on a year to year basis with any one variety being allowed no more than two years. Conditional approval will be granted only in exceptional cases and for reasons acceptable to a majority of the Variety Review Board. The fee schedule will be identical to that of normally accepted varieties.

To prevent the Lawn Institute list of approved varieties from becoming unwieldy, a periodic reevaluation of accepted varieties is needed. Criteria used for reevaluation shall include, but not be limited to: overall turf performance, commercial availability, consumer acceptance, volume of seed produced, record of payments to the Lawn Institute, and truth in advertising. Reevaluation will first be carried out three years after initial acceptance, and thence at three year intervals. All varieties that have been on the approved list for three or more years will be reevaluated during the next twelve months. A majority vote of the Variety Review Board is required to drop a variety. All deletions must be approved by the Executive Committee."

[In discussion it was made clear that some varieties are accepted for: special reasons and even only for regional usage, although not always among the highest rating nationally or for a particular attribute] - G.W. Pepin, Chairman

DIRECTOR'S ANNUAL REPORT

FISCAL YEAR 1975-6

It is most pleasant to be able to report to the membership another successful year for the Better Lawn and Turf Institute, in spite of a halting start because of procedures ruled questionable at the Houston annual meeting that resulted in appreciable reduction of outside support. However, as our able Secretary-Treasurer has reported, income and outgo nevertheless nearly balanced, with some help from interest accumulations, and excellent support from the proprietary program. We hope that in the years ahead, as some of the less marketable proprietary varieties fall by the wayside, addition of excellent newer ones will not only make up the difference but enhance our image for quality. The staff at the Marysville office is most grateful for the steady endeavor during the year of President Doyle Jacklin, and Chairman of the Variety Review Board, Dr. Gerald Pepin; they have diligently looked after Institute interests as occasion demanded. Vice President Miller has been active behind the scenes, and of course Secretary Russell has been a constant source of strength in dealing with complicated payroll, tax and accounting matters. We are gratified that Hercules continues its sponsoring role in the Institute, and we welcome Ross Allmon to the Board as of mid-fiscal year.

I believe that you will be amazed that we have been able to continue an essentially full program with annual expenditures little increased from what they have run through the decade. Some items inevitably rise (postage, for example), but we compensate by avoiding new capital expenditures to the extent possible, and utilizing to the fullest extent strengths built in prior years (photography, for example). Aside from the payroll, for which Mr. Russell keeps the accounting, the Marysville office operated on little more than thirteen thousand dollars for the year, of which nearly five thousand was consumed by Press Kit preparation, postage, and office supplies such as stationary, mimeograph, duplicating, etc. Rent consumed seventeen hundred dollars, and the remainder was accounted for by telephone, hospitalization, hourly help, services (including subscriptions and dues), and capitalization of plot-care equipment.

Those of you who take time to read the newsletter, Harvests, are well aware of the breadth of Institute activities. Harvests is issued quarterly, totaling this year 75 pages about evenly divided between news of Institute activities and briefings on national lawn-related research taken from the technical literature. Harvests amounts to a running account of the Institute, and through the years constitutes our record. If you should leaf through it, as I have done in part in preparing this report, I think you would be surprised at the magnitude of cumulative accomplishments. We have, for example, had 241 magazine stories reprinted and distributed (of course many others have not been reprinted because of duplication, or in order to save on costs), with distributions in the hundreds of thousands. This year we list 48 titles shown alphabetically by magazine or source in Table 1.

Within the last fifteen years, at least, we have not failed to issue both a spring and autumn Press Kit, mailed to a select list of editors, writers and broadcasters, - a list which we winnow and hone constantly in order to service only those recipients seeming to find the materials of interest. We try to confine the mailings to around a thousand, some fifteen percent going to members

TABLE 1

STORIES PUBLISHED OR PREPARED DURING YEAR

Agronomy News	"Insulation of Agricultural Science"
American Association of Nurserymen	lawn section of "Turfgrass Groundcovers"
American Horticulturist	"Lawn Basics"
American Horticulturist	"Lawn Fertilization"
American Horticulturist	"Let's Not Fritter Fertilizer"
Am. Hort. Soc., News and Views	"Spring Lawn Care Tips"
Better Crops With Plant Food	"Fertilize the Lawn, Also?"
Brooklyn Botanical Garden, "Handbook"	"Lawns and Their Tending"
The Bull Sheet (Midwest Golf Supt.)	"A Good Lawn Helps Stop Pollution"
Capper's Weekly	"The New Look To Lawns"
Changing Times	"Lawn Logistics"
Connecticut Magazine	background materials
Countryside Press	<u>Choice Lawns</u>
Chronicle Guidance	"Occupational Brief" for Landscape Architects
Ecological Society Bulletin	"World Caretaker", Eco-Forum rebuttal
Elsevier International, London, England	<u>Plants and Man</u> book, sectional materials
Fertilizer Solutions	"Lawn Service"
Flower and Garden	"Stopping Lawn Pests"
Flower and Garden	"Starting A New Lawn"
The Gardener	"Hit Paydirt, When Seeding The Lawn"
The Gardener	"The Perennial Ryegrass Rise to Stardom"
The Gardener	"Be Careful About Lawn Weeding"
Garden Supply Merchandiser	"The Lawnseed Industry"
Garden Writers Bulletin	"Don't Discount Pesticides"
Home and Garden Supply Merchandiser	"Lawns Come Into Their Own"
Horticulture	"Stopping Lawn Pests"
Horticulture	"Autumn Care For Lawns"
Horticulture	"A Baker's Dozen of the Worst Lawn Weeds"
Horticulture	"Basic Lawn Care"
Horticulture	"Give and Take in the Lawn"
HortScience	review <u>Turf Management Handbook</u>
HortScience	review <u>Folk Remedies Low Country</u>
House Beautiful	"Super Grass, ----"
Landscape	"The New Look To Lawns"
Metro Associated Service	text for garden section, newspapers
National Academy of Sciences	position paper
New York Botanical Garden Journal	"A Man-Made Ecosystem, Your Lawn"
Ohio Turfgrass Proceedings	"Trends in the Fine Turf Field"
Prentice-Hall, Inc.	<u>Lawn Keeping</u>
Reader's Digest	lawn section, <u>Illustrated Guide to Gardening</u>
Seed Trade News	"The Lawn Institute Says" and various pickups
Seed World	miscellaneous short items
Seed World	"New Lawn Opportunity with Perennial Ryegrass"
Seed World	"Rally 'Round The Ryegrasses"
TIE (The Institute of Ecology)	summary for newsletter
Turf-Grass Times	"New Lawn Varieties, Bane or Boon?"
Weeds, Trees & Turf	"Curious About Cultivars"

for their information (and we would hope to some extent being passed along to the local media). The Institute has built up quite a following, as evidenced by the occasional instances we come upon (e.g. April 9, St. Louis Post Dispatch). And we are grateful that nationally syndicated columnists, such as Earl Aronson of Associated Press, continue to insert our materials in their columns, in the case of Mr. Aronson with full credit. I doubt if any other organization achieves such exposure so economically.

We have been unusually fortunate this fiscal year in authorship of several publications apt to become reference volumes. I call your attention especially to Lawn Keeping, (Prentice-Hall), something of a revision and up-dating of A Perfect Lawn, (Macmillan). Prentice-Hall has brought down the price by utilizing a paper cover, and promises to do everything within its power to see that the book develops a market in vocational educational circles as well as popularly. The publisher felt that something a bit lighter than Jim Beard's Turfgrass Science and Culture would fill a niche, and it's nice to have P-H publicists and field representatives "working for us". Also, a reading-rack book, Lawn Choices For Choice Lawns, was prepared for Countryside Press; the Brooklyn Botanic Garden's Handbook on Gardening chapter about "Lawns and Their Tending" was completed; the chapter on lawns furnished Reader's Digest's Guide to Gardening; materials were sent the Christian Science Monitor; and others listed in Table 1.

This is not to overlook press-kit amplifications beyond our own program. With support from the Lawn and Turfgrass Division of ASTA (contributing nearly half of the cost), we prepared the lawn materials for the "Lawn and Garden Supplement" issued this year through the agency of William C. Pflaum, in association with The American Association of Nurserymen, The Fertilizer Institute, The National Arborists Association and The National Swimming Pool Institute. Copies of the "Supplement" were sent all members as a point of information. We furnished a similar set of materials to Metro Associated Services, New York, which were utilized without charge to us in order to have authoritative lawn information included (Metro provides the garden sections for many newspapers). We have furnished background material and source information upon request to publications as influential as Time, Changing Times, Newsday, Connecticut Magazine, etc. We have distributed reprints widely, to high schools, junior colleges, and even to universities (e.g. University of Missouri, University Extension Division). Of course our Press Kits still go to the state extension office in five states, for issuance to metropolitan area county agents. We have furnished materials to such organizations as the Career Information Center and Chronical Guidance, concerned with an oncoming generation of students wanting some practical knowledge about turf.

Surprisingly, one hospital requested a supply of reprints for patients! George Abraham, author of the Green Thumb column and TV personality in the Buffalo, New York area, continues to utilize our materials and offered "A Man-Made Ecosystem" to his TV audience. The gardening club of Illinois Bell Telephone, Elks Magazine, the Men's Garden Clubs of America, a Boy Scout's Pow Wow, all utilized and distributed our reprints.

I have continued my appearances on "The Morning Exchange" TV program out of Cleveland, both spring and autumn, on which occasions the station kindly offers free of charge "advertising" of reprints to those sending in a self-addressed, stamped envelope. In the weeks following an appearance we receive

hundreds of requests as a result. A constant trickle of such requests also comes from cordial editors printing such offers in their newspapers. I might comment that the Maryland Center for Public Broadcasting came to us for background on preparation of an up-coming series (you may know of this center for its "Wall Street Week" program).

Many Variety Review Board proprietors kindly furnished a number of one-pound seed samples for distribution to interested researchers. Sixty letters were mailed out to various universities making this offer, and although most of the varieties are well-known and already represented in research plantings, we did have significant response. The offer helps our "forward looking" image. Varieties offered were: Adelphi, Arboretum, Arista, Baron, Birka, Bonnieblue, Fylking, Galaxy, Majestic, Nugget, Pennstar, Ram I, Sydsport and Touchdown bluegrasses; Citation, Derby, Diplomat, Manhattan, Pennfine and Yorktown ryegrasses; Highlight, Jamestown and Koket fescues; and Emerald bentgrass. Our "Seal of Approval" is still offered qualifying seed mixtures, and is used by several members.

Personal appearances during the year, in addition to the TV spots in Cleveland, included visit with our good friend Norm Rothwell in Canada (who arranged conferences with federal dignitaries having seed control and research functions). Several visits were completed within Ohio, including the annual turfgrass conference in Cincinnati, the field day in Columbus, and consultations with the Chem-Lawn people concerning a story done for Fertilizer Solutions magazine due to appear soon. Dr. Schery spoke at a garden symposium in Xenia, Ohio, an annual event dedicated to repairing damage from the tornado of two years ago, a couple of times to the Columbus Rose Club. Dr. Schery testified at the EPA Hearings in Washington, D.C. (chlordanes), attended the agronomy meetings in Knoxville, Tenn., and of course the ASTA convention in Houston. A day was spent with Dr. Dunn, at the University of Missouri, inspecting plantings in this crucial climatic area.

In technical matters we have kept up contact with other research experts throughout the country, chiefly by means of our "advisor" mailing, utilizing the literature exchange list organized by Dr. Beard under auspices of the Agronomy Society turfgrass division. And, of course we profit greatly from experience with new cultivars on our own grounds.

So familiar-to-the-family have my annual reports become that details of our operations are common knowledge to most of you. I'll not impose further upon you here, but do welcome and questions you may have or elaborations you may wish. Mrs. Ebright joins me in thanking each and every one for the many courtesies and confidence shown in the Marysville office; it has been a pleasure to spend another year at the helm of the "Lawn Institute".

Dr. Robert W. Schery, Director

Jane Ebright, Office Manager

RWS:je

BOOK ABOUT LAWNS

Lawn Keeping, by Dr. Schery, appeared the first week of June. This is a complete summary of lawn tending, related to the local environment. The book is popularly written in order to be understandable, but reviews background material sufficiently that it can be used as a vocational teaching text (the publisher, Prentice-Hall, finds Jim Beard's college teaching text, Turfgrass Science and Culture, a bit too "heavy" for vocational use).

The book should prove useful for Institute purposes, and add to the Institute's prestige and image. Of course it stresses the usefulness of new varieties. About seed, it has this to say (page 77), - "Obviously the more careful the growing and cleaning, the more costly the product. You are not taking advantage of the industry's best technology by buying seed on the basis of cost ---".

READERS DIGEST MATERIAL PREPARED

Readers Digest has asked Dr. Schery to prepare the lawn section for a book to be entitled "Illustrated Guide To Gardening". This is a thoroughly illustrated compendium originally published in Britain, which is being revised for the United States and its special climates. We look forward to an influential future for this volume, due to be widely promoted by Readers Digest.

TWO MAJOR STORIES PREPARED

A lengthy article, "Curious About Cultivars?", was prepared for Weeds, Trees and Turf Magazine in April, containing much tabular material covering ratings at research centers around the country. Varietal characteristics are summarized for Institute cultivars, as a separate table.

A second story was prepared for Fertilizer Solutions Magazine, entitled "Lawn-Service - It's Only Beginning to Grow". Even though most lawn-service companies do not undertake seeding, a table listing Institute varieties, with thumbnail sketches was included. The story focuses upon Chem-Lawn operations, the biggest service company in the nation and soon to be **national**. Consultations were held with Dr. Robert Miller, Vice President for research, including on-site photographing of regular Chem-Lawn service.

We look forward to appearance of these articles, as well as others, during summer and autumn.

SEEDSMEN'S DIGEST

Seedsmen's Digest carried the Institute item "Natural Grass Vs. Artificial Turf", in the June issue. The story opens, "Both the lawngrass breeder and the research chemist have made great strides in improving their products in recent years. Never have there been so many fine grass cultivars, for home lawns, golf courses, commercial ground, and even specialties such as roadside and airport planting". The advantages of living grass over artificial turf are cited, and the claim that plastic grass is more economical to keep up disputed. Two photos, of "improved fine turf cultivars and, 'big names' in athletic field cover" were included.

AP USES INSTITUTE ITEM

A telephone call from Shelbyville, Tenn. to Dr. Schery at his home on Memorial Day, first alerted us to an Institute based story distributed by Associated Press. Our old friend, Earl Aronson, was responsible, giving full credit. Institute perennial ryegrasses were cited by name, as well as some of the new bluegrasses.

BETTER CROPS STORY

The number one - 1976 issue of Better Crops With Plant Food appeared in June. Included was the Institute's story, "Fertilize the Lawn -- Also!". Pictured were two improved perennial ryegrasses contrasted with common, and comments on the necessity for adequate fertilization of better cultivars of all kinds. The story indicates, " -- fine, newly bred varieties can now take full advantage of fertilization". Some of the conclusions are the editor's, including "New lawngresses are always coming along - sometimes with new 'talents'. But always with an appetite for sound fertility".

STORY FOR HORTICULTURE

Horticulture magazine, with change in editors from Ed Steffek to Paul Trachtman, has adopted a different editorial stance. The emphasis is now on a somewhat more "arty" presentation, with in-depth discussions, expected to appeal to a sophisticated audience that finds "how to do it" items without discussion too shallow. Upon invitation from Editor Trachtman, Dr. Schery has prepared "Give and Take in the Lawn", which explores the various influences affecting bluegrass, fescue, ryegrass and bentgrass.

INSTITUTE QUOTED

We are pleased that E. Dexter Davis, publisher of Greener Gardening, out of Holliston, Maine, saw fit to quote the Institute in his April issue. Davis carries an item entitled "New Lawngresses". A few excerpts from the story follow: "New lawngresses have been filling the seed and gardening literature for several years in a most delightful way ---". "Dr. Robert W. Schery, Director of the Lawn Institute, brings common sense and reassurance to the confusing subject. He reports that some of the new grasses with great value in home lawns [must cost more] --". "Recent introductions which Dr. Schery believes will be widely available this year include - [varieties of perennial ryegrass, fine fescue and Highland bentgrass are cited]".

IN AMERICAN HORTICULTURAL SOCIETY "NEWS AND VIEWS"

The eight-page American Horticultural Society bi-monthly carried the Lawn Institute's "Spring Lawn Care Tips" in the May issue. It recommends, "If the lawn is thin, or lacks modern lawngress varieties that you would like to have there, scatter top-quality seed ---". Scarification and fertilization are also advised.

PRESS KIT REACH

We have no means for surveying use of Press Kit materials, but occasional letters received indicate that the Press Kits are being used. For example, this from an officer in the police department of Franklin, Massachusetts, "Dear Dr. Schery: - I recently read an article in the Boston Globe in which you were quoted about the quality and advantages of planting -- ryegrass."

INQUIRY FROM IRAN

We are indebted to Ed Mangelsdorf, St. Louis, for forwarding an interesting letter from the managing director of Vivid Co., Ltd., Tehran, Iran, asking for information about establishing lawns in that distant country. Apparently this is a new concept for Iranians, and to answer all of the questions asked by Mr. Amid is impossible by letter. Limited advice, and leaflets about the newer cultivars, were sent, a more extensive assortment of reprints and books being offered if costs could be covered.

INSTITUTE MATERIALS FOR MENS GARDEN CLUBS

Lyman Duncan, Executive Director of the Mens Garden Clubs of America, requested 200 copies each of several reprints "for our workshops". Immediately sent (or ordered for reprinting) were "Turfgrass Cultivars", "The Lawn-makers Year", "Avoid Summer Brownout in the Lawn", and "High Fever Over Cool Lawns". This is an excellent opportunity to have Institute influence felt in influential circles.

STORY APPEARS IN SEED WORLD

The April 1976 "Lawn Seed" issue of Seed World, contained a Lawn Institute lead-off story entitled "New Lawn Opportunity With Ryegrass". This was a composite from releases, and the issue also carried other stories from the Institute ("Lawn Glory" --- "Select Bluegrasses") and from Institute members (Loft, Thorne for Jacklin's, Jacklin, etc.).

CHRISTIAN SCIENCE MONITOR CALLS

Clayton Jones, Christian Science Monitor, undertook a lengthy interview with the Institute in preparation for an item in the paper. Press Kits and reprints were sent to Mr. Jones, and it was suggested that he secure a copy of Lawn Keeping, easily understood background on lawns and their care.

MARKET INQUIRIES

The spring season has been a busy one from the standpoint of market inquiries about lawns and lawn supplies, originating mostly out of New York City. This may signify an unusual and increasing amount of interest in the lawn supply market? Typical inquiries want to know total volume of lawnseed sold, particular uses, trends, and so on. General information is given over the telephone, and typically followed up with a mailing to reinforce the idea of the importance of modern cultivars. Typical is a request from the McKinsey Corporation, April 21, to whom a reprint listing VRB cultivars (and their descriptions) was sent, as well as the names and addresses of proprietary variety sponsors in the Institute.

COMMUNITY COLLEGE SUPPLIED

Dr. Jim Martin, Life Sciences Instructor at Lincoln Land Community College, wrote of the setting up of a horticulture program concentrating upon turf and related aspects. He requested "any help you may be able to give us. In particular any literature that you have, recommendations or suggestions--". Institute reprints were offered at no charge, and the paper-cover Lawn Keeping suggested as a possible text.

GREENE COUNTY GARDENING SYMPOSIUM

Dr. Schery was one of the featured speakers at the two-day Garden Symposium held in Xenia, Ohio, in a county still concerned with "reconstruction" from the tornado of two years ago. General background information on lawns, followed by a question-answer session rounded out the presentation. Two reprints ("New Varieties For Fine Turf" and "A Man-Made Ecosystem, Your Lawn") were distributed and an additional supply left for hand-out to later visitors.

STORY IN GOLF PUBLICATION

The Bull Sheet, official bulletin of the Midwest Association of Golf Course Superintendents, carried the Institute story "A Good Lawn Helps Stop Pollution" in the May issue.

PEST "BOOK"

The previous issue of Harvests reviewed Dr. Beard's turfgrass book (in magazine form), issued by Intertec of Kansas City as one unit of their "How To" series. Since then Intertec has kindly sent complimentary copies in the series, How To Control Lawn Diseases and Pests, by Shurtleff and Randell; and How To Care For Shade and Ornamental Trees, by Baumgardt.

The 96-page "book" on pests is abundantly illustrated, with much use of color. Inevitably, in talking about pests, a negative flavor is imparted and a neophyte lawnsman can hardly but be discouraged by the abundance of afflictions with which he may be confronted. Perhaps the introduction could have pointed out that most of the problems are self-correcting, rather than launching in with an opening statement of "Anyone who wants a beautiful lawn free of insects, diseases and other pests will find this book not only invaluable, ---".

Most of the insects and diseases affecting lawns are well illustrated, identifiable by pictures (backed up by verbal discussion in later pages). The pictures are called a "key", but no attempt is made to provide an alternative series of choices characteristic of the typical "key". Most of the pictures are captioned, but a few are not.

As in any book listing "cures" (insecticides and fungicides), obsolescence comes quickly. For example, chlordane has been banned since publication, and newer information has come along (such as with a soil drench of a systemic for Pythium control). But the book does note that some of the pesticides listed may become prohibited.

Lawn insects and their control is reasonably simple compared to recognizing and controlling diseases. Thirteen fungicides are listed for Helminthosporium, dollarspot, and brown patch, - and almost as many for several other diseases. Add measures for damping off, nematodes, slime molds, algae, moss, and various animal pests in the lawn, and one ends up with more detailed information than can be remembered.

Therefore the book will probably be most useful as a practical guide to be consulted if and as pest troubles appear. Liberal appendices give information about conversions, calibrations, and a glossary of terms. Four pages (of four columns each) wind up the book as a comprehensive index.

HAS ARTIFICIAL TURF PEAKED?

A thorough discussion of professional assessment of artificial turf is given in the April issue of Western Landscaping News. It is generally conceded that artificial turf is harder and more abrasive than natural turf, although opinion is divided as to which type is preferable and which likely to result in more serious injuries. Many players object to artificial turf, criticism including build-up of heat. The article quotes from a Stanford Research Institute study which indicated that the most serious injuries occurred in stadia having artificial turfs.

Cost for artificial turf has become astronomical. Astrofurf in the new Seattle stadium cost over a million dollars. 3M (Tartan-Turf) and American Biltrite (Poly Turf) have both dropped out of the market, leaving only Monsanto (Astroturf) in the business. This in itself suggests that the heyday of artificial turf has now passed.

TOUCHDOWN LAUDED

Herb Graffis, in his "Swinging Around Golf" column in Golfdom touts Touchdown Kentucky bluegrass as "-- disease resistant with upright leaves, endures close cutting and is a rich green early in the spring and hold color later in fall than Merion. It is impressive in its density and aggressiveness."

GLADE MENTIONED

The March issue of Flower and Garden magazine featured Glade in a brief announcement entitled "A New Lawn Grass". The news note mentioned suitability for shade, and dwarf habit.

TURFGRASS DISCUSSION

The April issue of Park Maintenance magazine presents the magazine's "Guide to Selection of Turfgrasses for 1976". The list was compiled through inquiry of seedsmen, not all of whom replied. The first page (containing information from Jacklin, Warren, Scott and NK) provides no species breakdown, so that one has to be reasonably familiar with grasses to know where blue-grasses break off, perennial ryegrasses and fine fescues begin. The Loft-Kellogg listing is more inclusive, mentioning not only proprietaries but other established varieties. The publicity is good, but the story is too restricted to be very useful.

ADVISING THE ELKS

We are encouraged that the one and one half million members of Elks around the country will soon be receiving sound information on lawns. Helen Rosenbaum, of the Editorial Department of the Elks Magazine, writes: "Thank you for the big package of -- releases which arrived last week. I would appreciate some ---- photos --- so that I may devote a column to the care of lawns---".

NATIONAL ACADEMY OF SCIENCES REQUEST

A letter from Fred W. Clayton, Senior Staff Officer, National Research Council (National Academy of Sciences) asked Dr. Schery for a "position paper" helping to offer guidance in a study being taken for the Environmental Protection Agency. The committee is anxious to hear of the impact of pesticide regulations, especially if they can be documented with technical information. Dr. Schery pointed out some of the misgivings due to elimination of proven materials which scarcely seemed a threat to society, but even more serious the cessation of development of new products due to the difficulty and cost required to obtain registration, at least for minor uses.

SPEAKING APPEARANCE

On June 2, Dr. Schery was speaker at the Columbus Rose Club Meeting, at which time "Lawn Basics" reprints were distributed to attendees.

DISTANCE RECORD FOR THE QUARTER

Although the quarter brought exchange of correspondence with Chile, the distance record is probably with Tehran, Iran. F. Amid ordered copies of both Lawn Keeping and A Perfect Lawn, as well as wanting a complete set of Institute reprints. These were sent in late June.

AN APPRECIATION

"Thank you for ---- the piece on cultivars. I hope I can do justice in layout to all the work you have put into it." Robert E. Early Jr., Managing Editor, Weeds Trees & Turf.

PRESS KIT IN PRODUCTION

The Institute's customary Autumn Press Kit is in production, and should be mailed around mid-July. Included are 18 pages, including 41 stories and covering letter. To help save on increasing postage costs, only two back-up reprints will be included this autumn, "Hit Paydirt, When Seeding The Lawn" and "Autumn Care For Lawns".

TREE CARE

Because lawn maintenance and tree care interrelate, Intertec's magazine-type book, How To Care For Shade and Ornamental Trees, will be of interest. The book is by Dr. John Baumgardt in the "How To" series.

Baumgardt is an advocate of fertilizing trees through the drilling of holes into the soil. Considerable research indicates, however, that fertilization of the lawn is sufficient for both grass and trees. This is not mentioned in the book. Nor does Baumgardt very often indicate alternatives, such as the considerable evidence showing that painting scars from cut limbs is not necessary. He does mention that the filling of cavities with concrete probably has little value.

While one might disagree with Baumgardt about a number of things, the book is nonetheless a handy, well-illustrated condensation of information that touches upon landscaping, tree planting, tree pruning, fertilization, watering, and diagnosing some of the ills that trees come down with. Of special interest will be the listing of both common and rare species as candidates for planting on the lawn; they are categorized by height and hardiness, with additional comments about each.

A THANK YOU

"Thank you very much for all the information you gave to me. This is a real pleasure to communicate with you". ---- Pépinière de Laval, Nursery, Inc.

TECHNICAL SECTION

TURF RESEARCH IN MISSOURI

Dr. Schery visited with Drs. Dunn and Lobenstein at the University of Missouri, May 12. Particular attention was paid to the performance of grass cultivars, in that Missouri represents something of a marginal environment towards the extreme south and west of the region for which most of the north-eastern cultivars are well adapted.

Turfgrass research at the University of Missouri is confined mostly to the efforts of Dunn, who also has teaching responsibilities. Dunn's investigations include suitability (and possible selection) of zoysias and bermudagrasses, in comparison with the more usual bluegrasses and perennial ryegrasses. He is also undertaking a breeding and selection program cooperatively with a forage breeder, hoping to uncover a better-looking, better-spreading tall fescue.

In the more populated areas of Missouri bluegrasses are not highly favored as fairway species, and the trend continues towards zoysia and hardy bermudagrasses (several selections have been released by Kansas State University which may "catch on"). Spring dead spot, of unknown cause, is still quite a problem with bermudagrass. Bentgrasses do well with golf green care, but fine fescues fare poorly in Missouri.

The new perennial ryegrasses have looked quite good at Missouri, especially Manhattan. During summer some of the ryegrasses have not held up so well as had bluegrass, although irrigation is needed for either to perform well through summer.

At Columbia bluegrass is the recommended mainstay for lawns, although not without troubles. Sod webworm has been bad many years, and seemingly is more devastating under high mowing and high fertility. Dr. Dunn is reducing maintenance, in keeping with today's demands for economy and less use of fertilizers-pesticides. Ordinarily fungicides are not applied to the trial areas, and insecticides only on an emergency basis.

Lawn cultivars under test at Columbia rate differently than at the research centers in the Northeast. Most of the Rutgers hybrids that have become proprietary leaders do not do so well in Missouri as would be expected. On the other hand Windsor, which often rates poorly in the Northeast, has looked good. Fylking has done well on average, although tailing off a bit in the last two years. Birka has been excellent, as have been Sodco, Sydsport and Touchdown. Satellite ratings come from branch stations in the extreme Southeast (bootheel) and southwest (near Joplin), but receive not a lot of professional attention. Plush has rated well in both locations as have Brunswick, Enmundi, Park and Windsor.

SUBURBAN LAWN ANALYZED

It has finally happened; the pure ecologists have studied a suburban lawn in the same detail accorded natural vegetation. "Energetics of a Suburban Lawn Ecosystem", derived from H.H. Falk's PhD thesis study, appeared in the Winter 1976 issue of Ecology (Vol. 57, No. 1, page 141-150). The study was undertaken in coastal California with a bluegrass-fescue lawn receiving conventional care, including a pesticide application. The study is especially interesting in documenting many surmises about lawns, accepted but not heretofore "proven".

SUBURBAN LAWN ANALYZED (coninued)

In general the lawn ecosystem is extremely productive, on a par with vigorous corn fields (over 1,000 grams/M²/yr); this exceeds slightly the natural productivity of tall grass prairie, and is far ahead of dryland prairie. Man and his inputs dominated the ecosystem, again about equivalent to the energy investment in growing corn. The lawn was a remarkably productive feeding ground for flock birds, which utilized 46 Kcal/M²/yr, twenty times the consumption found in natural grasslands.

The presentation opens with interesting introductory material, that draws partly from The Lawn Book. Clippings were removed, and tree litter raked (accounting for much of the energy and fertility loss from the lawn ecosystem). Core samples were taken to determine root biomass, the predominate portion of total biomass (nearly 2 kilos/M²) at peak season (August). Invertebrates were abundant, but a minor constituent on a weight basis compared to vegetation. Contrary to natural prairie, living vegetation exceeded dead vegetation (thatch) throughout the year. Below-ground biomass peaked at about 1.6 kg/M² in summer, declined to about 60% of this in spring, and was about a 15-fold that of the foliage on a weight basis. The many types of invertebrates found are documented with estimates of their energy consumption and abundance; as would be expected the herbivores and scavengers far exceeded carnivores. However, birds as carnivores of invertebrates (principally insects), consumed an amount nearly twice the computed availability (some, however, could not be accounted for because of subterranean existence and dispersion of moths from pupae).

By far the greatest energy inputs were water (irrigation), gasoline (for mowing), and chemical fertilizer. Labor was not significant in terms of energy expenditure, although it would have been in terms of cost. The nutrient drain resulting from removal of litter and clippings was not compensated for by the amount of fertilizer (and manure) added, and resulted in a net deficit amounting to about 35% of the nutrient content of green grass removed (roughly 2,300 g of N; 900 g of P; and 1500 g of K, for 110 M² of lawn). The article winds up with an input-output diagram of factors influencing the lawn ecosystem, of which the main loss of energy is as heat to the atmosphere (reflecting metabolism). Man's inputs account for slightly less total energy than does litter, and for less than half of the producer input (by photosynthesis).

FURTHER RATINGS FROM OHIO

Additional comparisons of turfgrass cultivars have been received from Ohio State researchers during the quarter.

In northern Ohio (Wooster), using a three-year average for general appearance, Touchdown rated first, followed by Adelphi, Bonnieblue, Sodco, Glade, and Ram I. Not too far off the pace were Merion, Sydsport, Nugget and Baron.

In Central Ohio (considering "Institute cultivars" only), averaged for five years, at 1 1/2 inches, were: Adelphi, Sodco, Merion, Prato, Nugget, Arista, Sydsport, Fylking, Pennstar, in that order, all well ahead of common; at 3/4 inch mowing height the relative standing was essentially unchanged except that Nugget advanced appreciably (i.e. low mowing did not lower the Nugget rating, while it did lower that of most every other cultivar).

Under low maintenance (no fertilization or irrigation during 1975) South Dakota common led the ratings, followed by many common types including Park and Kenblue, with Adelphi, Merion, Sodco, Pennstar, Prato, Fylking, Arista, Sydsport towards the bottom of the list and Nugget a poor last.

FURTHER RATINGS FROM OHIO (continued)

One year evaluations of relatively new seedings show Plush, Majestic, Galaxy, Glade, Baron, Brunswick, Birka, Enmundi, Touchdown, and Bonnieblue running in that order.

Among the fine fescues, on average for four years, Highlight led, ahead of Pennlawn, Ruby being last. Newer seedings, judged on one year performance, show Koket, Jamestown, and Banner doing well; Pennlawn, Wintergreen, Fortress and Novarubra towards the bottom of the list.

Among the perennial ryegrasses Pennfine is first followed closely by Manhattan; towards the middle of the pack are Pelo, NK-200, NK-100 and Compas, - all, however, significantly ahead of common.

It was difficult to find significance in the bluegrass blend comparisons, a particular component sometimes contributing to a high-rating turf and sometimes to one that is low-rating. In general, blends combining three varieties in equal parts scored highest, ahead of two-part blends or ones in which high percentages of Kenblue were used. Fylking, Merion, Pennstar, Prato and Windsor each appeared in one or more of the highest rating combinations.

RECENT MICHIGAN RATINGS

1975 cultivar ratings have been received from Michigan State University. Ratings are given for many qualities, such as spring green-up, leafspot, snowmold, etc. Judging by the weighted average for six years, in one test area two New Jersey non-commercial coded selections headed the list, followed closely by Sodco and Nugget. Intermediate were Merion, Sydsport, Pennstar and Fylking. In a separate comparison of New Jersey numbers alone, Majestic and Bonnieblue rated well.

Most vigorous in getting established in organic soil were common types, although Glade was not far behind, followed by Galaxy, Birka, Fylking, Touchdown, Baron, Sydsport, Bonnieblue, Nugget, Merion, Plush, Majestic, and Adelphi, in that order. In a separate comparable establishment test Ram I led, with Pennstar, Merion and Windsor the lowest rating of 27 selections.

Evaluation of blends seemed inconclusive; in the two blends rating most highly Baron was included, but also was a component of other blends rating comparatively poorly. The same was true of Merion, Nugget, Sodco and Sydsport. Nugget rated best as a fairway grass, followed by Baron, and more distantly by Sydsport, Prato, Pennstar, Merion, Sodco, Fylking, Adelphi and Windsor.

Six-year ratings for fine fescues showed Dawson in the lead (none of the Institute varieties were included in the comparisons), while in a parallel two-year test Dawson again led, with Jamestown, Highlight and Koket on high middle ground, Pennlawn towards the bottom. A combination of equal parts Jamestown, Highlight, Wintergreen and Dawson was the leading fescue blend.

In northern Michigan Menuet was substantially the leader, with Jamestown towards the middle of the list, Highlight and Ruby somewhat lower. Among bluegrasses in the North, Galaxy and Sydsport ranked among the best, followed by Baron, Nugget, Adelphi, and Fylking, with Merion, Sodco, Pennstar, Arista, and Prato substantially lower.

TENNESSEE PROCEEDINGS

Proceedings for the 1976 Turfgrass Conference of Tennessee was received in May. Presentations related chiefly to golf courses, including many non-turf considerations. Waddington reviewed Controlled-Release Nitrogen Sources, voicing the familiar Penn State position that no product presently available is suitable for maintaining turf with a single application annually. Waddington had good things to say about ureaform when used over a prolonged span, and also lauded other slow-release sources (IBDU, coated prills, SCU).

Callahan discussed New Bentgrass Cultivars. Comparing a number of vegetative experimentals with older cultivars, he found a Florida selection (ARC-1) especially exciting, and was favorably impressed in general with Penn-cross (being consistently "good" though never "tops"). Of Emerald he concludes, - "With all the publicity given the new seeded cultivar 'Emerald' its performance was a disappointment. Reports from experiment stations in other states in the South reflect the same disappointment --".

Seitz discussed the use of tall fescue in the transition zone, and notes nothing superior to "Kentucky-31". He recommends at least 4 lb. of N/M annually, tall mowing, perhaps light thatch removal every other year at proper season, regular overseeding to keep the turf tight; insect, disease and weed pests are seldom much of a problem, and are controllable when they occur.

FROM CALIFORNIA TURFGRASS CULTURE

The winter issue of California Turfgrass Culture was received at the end of April. The lead article was entitled "Turf Seed Quality", by Dr. Law, Washington, presented at the 29th Northwest Turfgrass Conference. Law pointed out what is well known to the professionals, that crop is frequently the most serious contaminant of a seed lot. Of course seedsmen are familiar with the various labeling requirements, which in Washington include mention of the percent of crop and of weed-seed in the lot.

In the same issue Dr. Madison, California, discusses "Eyeballing Turfgrass Fertility Needs", originally presented to the Colorado Turfgrass Conference. Madison mentions that optimum growth occurs when exchange capacity of the soil is about 75% saturated by calcium, 10% by magnesium, and 3% by potassium. When ammonium fertilizers are continuously used there is an initial favorable response as the ammonium ion displaces other cations on the soil sites; but persistent use can result in insufficiency of necessary major fertility ions. The soil should be tested to determine adequacy of important cation nutrients. Madison also points up that nitrogen may so "force" growth as to exhaust other nutrients, such as phosphorus; phosphorus can often be mineralized only at a moderate pace, insufficient to supply enough of the nutrient for highly intensified grass growth.

Madison also points out signs in chlorotic grass. If grass is chlorotic from lack of N, growth slows down; if from iron quantity of clippings remains much the same. The new leaves on grass showing nitrogen deficiency are greener than the older ones, while just the opposite is true with iron deficiency. With magnesium deficiency grass blades remain greenest near the veins; sulfur deficiency results in an uniformly pale green color (and reduced size).

GROWTH REGULATORS AND BLUEGRASS YIELDS

Buttner et al, Idaho, report upon "Plant Growth Regulator Effects on Flowering of Poa pratensis Under Field Conditions", in the March-April Agronomy Journal. Growth regulators do influence bluegrass seed production, although differently with different cultivars. Several increased panicle numbers as much as 84% in Merion, and others as much as 71% with Fylking and Nugget. Giberellin increased seed weight 11% in Merion. With proper choice of material and timing, seed yield increases would seem possible (primarily because of increased panicle number and seed size). The authors had hoped to uncover chemical treatments that might substitute for autumn field burning.

SOUTHERN BLUEGRASS RATINGS

Data received from Dr. Dickens, Auburn, Alabama provides the following relative standings for certain bluegrass cultivars. Keep in mind that Kentucky bluegrass is not well adapted to locations so far south as Auburn. Baron was the only Institute cultivar in the top third percentile of varieties tested. In the middle percentile were Adelphi, Bonnieblue, Fylking, and Pennstar. In the lowest percentile, along with common, were Merion, Nugget, and Sodco, perhaps indicating poor adaptation this far South. However several blends rated more highly than did their components separately. For example Merion-Baron and Pennstar-Sodco both rated in the top third; Merion-Kenblue, Merion-Pennstar, and Pennstar-Nugget were in the middle group. Nugget and to a lesser extent Merion, suffered appreciably from rust.

RYEGRASS REACTION

Dr. John Hall, Maryland, in the Turfgrass Times (January-February), questions the emphasis being given the new perennial ryegrasses in his article "Don't Send a Ryegrass to do a Bluegrass's Work". Hall feels there has been considerable over-selling of ryegrass, and cites ryegrass's well known deficiencies of strong competitiveness (not letting other species in a mixture become established), inability to spread (being a bunchgrass), faster growth (requiring more mowing), etc. He feels that at least in Maryland perennial ryegrass requires higher mowing than is preferred, that it lacks shade tolerance, that it is susceptible to heat stress, that it suffers considerable disease (especially Pythium), etc. Of the ryegrasses tested, he likes Manhattan, Pennfine and Derby the best.

In some of Hall's tests, ryegrass has become clumpy when used at light enough rates in a mixture to allow establishment of bluegrass. In spring it grows upright and unevenly, and its shiny sheen contrasts with the duller bluegrass. For golf fairways, ryegrass is not sufficiently resilient to hold the ball as well as bluegrasses. And, of course, even the better ryegrasses do not clip quite so neatly as does bluegrass. Hall notes "its ability to heal divots or other injury is totally inadequate". He adds "In my opinion, the perennial ryegrasses should be thought of as a specialty grass in Maryland and should only be utilized in situations where quick, temporary cover is required."

CATION TRANSPORT IN THE NORTHEAST

Cronan, New Hampshire, reported to the annual meeting of the Ecological Society that sulphate anions, rather than bicarbonate or organic acid anions, seems to be the principal counter-ion for cation movement from the soil (wooded).

DISEASE AND FUNGICIDES

A report received in April from Jackson and Campanini, Rhode Island, reviewed fungicide evaluations for 1975. The authors find continuing development of resistant races of various diseases. Dollarspot has long been recognized as developing resistance to heavy metal fungicides and some of the organics, and now shows resistance to systemics. Fusarium and powdery mildew are other diseases seeming to evolve biotypes tolerant to systemic fungicides.

Of the commercial fungicides, several provide effective control of disease, so that the turf manager is not without support. On bentgrass, both dollarspot and copperspot was better controlled by contact fungicides than by systemics; the contact, Dyrene, however, gave very poor control of brown-patch. Particularly did Daconil combined with a systemic provide excellent results on bentgrass. A number of available and experimental materials reduced the symptoms of leafspot on mixed bluegrass, but symptoms declined naturally in any event by summer.

WEEDS WELL COVERED

The April issue of the Golf Superintendent carried the papers presented in a turfgrass weed control symposium presented to the Weed Science Society in early 1974. This provides something of an "official" listing of the worst weeds in the North and the South. Included, too, are discussions of weed physiology and ecology. Unfortunately, editing was a bit lax, with seeming transposition of data in some of the tables and unclear references.

LOCALIZED EVOLUTION

A study by Wu and Antonovics, North Carolina, reported in Winter 1976 Ecology (Vol. 57, No. 1), reports that plantains growing along the roadside acquired relative immunity to lead (from leaded gasoline), with selective pressure sufficient that this became hereditary trait passed along to subsequent generations through seed. A species more tolerant of lead, bermudagrass, did not exhibit this highly localized evolutionary change.

VALUE OF CLIPPINGS

A study on bahiagrass, in Georgia, by Beaty et al, indicates considerable value from clippings returned to the sward as compared to removal (as in grazing). Leaving the forage was equivalent to doubling nitrogen fertilization. The research was reported in the March-April Agronomy Journal.

AIR QUALITY INFLUENCES CROPS

MacLean and Schneider, New York, report upon tomato and bean performance comparing the normal air at Yonkers with the same air "cleaned up" by chemical removal of about 70% of its photochemical oxidants. The report appears in the Jan./Mar. Journal of Environmental Quality. Yields and quality were reduced by one fourth to one third when the crops were grown in normal air compared to that from which the oxidants were largely excluded. It seems reasonable to suppose that similar influence occurs with all green plant growth, and that reduced vigor with lawns might be similarly accounted for.

PRONAMIDE FOR BERMUDAGRASS TRANSITION

Johnson, Georgia, reports in the May Weed Science on investigations using pronamide to "ease out" wintergrass perennial ryegrass more satisfactorily at transition time enhancing recovery of the bermudagrass. Application made March 20 in the Georgia Piedmont was more effective than treatments made in February or April, and was deemed successful (although temporarily reducing quality of the turf).

BLUEGRASS DEFOLIATION

Youngner and Nudge, California, report in the March-April Agronomy Journal, on "Soil Temperature, Air Temperature, and Defoliation Effects on Growth and Nonstructural Carbohydrates of Kentucky Bluegrass". The research shows that defoliation (equivalent to low mowing) is of overriding importance; it can stress the grass greatly even at the most favorable growing temperatures. In general cool temperatures (10°C) were best for triggering new growth, but moderate temperature (18°C) produced the greatest quantity of foliage. High temperatures (27°C) reduced growth, and all plants ceased growing at 32°C. These results were consistent whether the soil temperature was maintained separately from air temperature or not. The study indicates how traumatic scalping can be, and how it intensifies stress whenever other growing conditions are at all unfavorable. The test variety was Merion.

"HIDDEN" MICROORGANISMAL ACTIVITY

A report by Ausmus, Oak Ridge, Tennessee, to the Ecological Society, calculates that about five times more carbon utilization occurs in the microbial biomass than can be accounted for by primary production through photosynthesis. Thus there must be a high level of recycling in the forest floor (the same would seemingly hold true for the thatch of lawngrass). This intensely active biological system, of considerable magnitude, would seemingly have influence on lawn prosperity as well as the ecosystem of a woodland.

NEW HERBICIDES FOR BERMUDAGRASS

Two new pre-emergence herbicides, oxadiazon and butralin, were tried by Johnson, Georgia with annual applications repeated over a four-year period. Results are reported in the May issue of Weed Science. Johnson concludes that no damage results from accumulation of oxadiazon, but that many cultivars of bermudagrass suffer injury from butralin build-up.

PHOSPHORUS CONTAMINATION OF STREAMS

A report by Johnson et al, New York, reported in the April-June Journal of Environmental Quality, discusses phosphorus transport from a rural watershed. As would be expected, losses are greatest at times of heavy stream flow. Approximately 20% of the phosphorus found in the streams came from farming activities, 45% was derived from natural geochemical processes, and 35% from point source inputs. Thus very little of the phosphorus comes either from agriculture or general fertilization applications such as the fertilization of lawns. Less than 1% of the phosphorus applied as chemical fertilizer (and manure) was lost from the watershed in dissolved form, attesting again to the non-polluting nature of lawn fertilization.

NITROGEN IN THE ECOSYSTEM

Woodmansee et al, Colorado, reported to the annual meeting of the Ecological Society on the nitrogen budget for shortgrass prairie. 91% of the nitrogen in the ecosystem is bound to relatively inert organic matter, and 99.6% is bound to living and dead organic matter collectively. The remaining 0.4% occurs mainly as ammonium and nitrate. At most only 1.7% of the nitrogen capital occurs in above-ground vegetation, and thus represents a proportionally small loss when consumed by herbivores or removed as clippings.

TALL FESCUE NOT MORE HARDY

Cook and Duff, Rhode Island, report in the Jan.-Feb. Agronomy Journal that autumn fertilization with potassium is not necessary and does nothing to make tall fescue more winter-hardy in Rhode Island.

BLUEGRASS VARIETAL IDENTIFICATION

Work continues at Geneva, New York, on identification of off-types in Kentucky bluegrass cultivar seed. Several generalities are reported by Nittler and Kenny, in the March-April Agronomy Journal. For example several varieties (including Park and Troy) never exhibited "spreading" crowns, compared to the 93% that were spreading with Bonnieblue (the remaining 7% semi-spreading). Troy averaged less than two tillers per plant, compared to 6.4 for Sydspport; Kenblue averaged only 0.3 rhizomes per plant, while Sodco averaged 2.6 (and percentage of stems that were rhizomes was only 6 for Prato compared to 41 for Sodco). Cultivars such as Fylking and Bonnieblue could be distinguished from compact crown types such as Park or Troy.

FATE OF FERTILIZER NITROGEN

A test in Texas, reported in the Jan./Mar. Journal of Environmental Quality, utilizing "tagged" N, showed rather little contamination of ground water from normal (abundant) nitrogen fertilization of a sorghum crop. About 55% of the nitrogen was captured by the crop, about 20% was immobilized, and about 17% presumably denitrified (could not be accounted for). About 2.4 ppm of fertilizer-derived nitrate was found in subsurface drainage water during the cropping season, diminishing to 0.5 ppm or less by the end of the season. These small increases are not sufficient to seriously reduce ground-water quality. On a densely growing "crop" such as lawngrass, undoubtedly far less of the fertilizer would escape plant pickup, and nitrate contamination of ground water would be almost non-existent with heavy soils.

CHEMICALS FOR LAWN RENOVATION

Klingman and Murray, Beltsville, report in the March issue of Weed Science upon the "Germination of Seeds of Turfgrasses as Affected by Glyphosate and Paraquat". Both paraquat and glyphosate have been recommended for chemical knockdown of old vegetation prior to reseeding for renovation. The tests show that paraquat has a residual effect inhibiting the sprouting of familiar turfgrass seeds, but glyphosate does not. This includes an influence from clippings treated with each of the compounds and scattered over the new seed. Although the test conditions were extreme, the results do suggest that paraquat is more likely to reduce stands of a new seeding when used as a renovation chemical than is glyphosate.

SCU COATINGS REVIEWED

The Sulphur Institute Journal, spring 1976, carried an article by Scheib and McClellan, TVA, on "Characteristics of Sulphur Texture on SCU". Electron microscope photographs revealed coating characteristics of sulphur to make slow-release urea. Pinholes are apparently the chief cause (means) of urea diffusion. Preparation of SCU involves pressure-atomization spraying of molten sulphur on a falling curtain of urea.

AFTER-RIPENING OF WINTER ANNUAL WEEDS

Baskin and Baskin, Kentucky, investigated temperature requirements for the after-ripening of winter annual weeds, such as chickweed (often a pest in lawns). The research was reported to the annual meeting of the Ecological Society. A period of relatively warm temperature is needed, and seed kept cool (below 20°C) was prevented from sprouting. Thus seed of winter annuals must have a touch of hot dry weather to become viable. This suggests little immediate hazard from winter annual seed produced late in the season, and perpetuation of annuals in the year following would depend upon the spring crop.

TIFGREEN. BERMUDAGRASS PHYTOTOXICITY

A study by Callahan, Tennessee, published in the January issue of Weed Science, reports on the response of Tifgreen bermudagrass to eight herbicides. Injury increased each consecutive year the herbicides were applied, then diminished when applications were stopped. In the third year (maximum damage from most of the herbicides) injury was severe with siduron, terbutol, bandane, bromacil, benefin and DCPA; slight to moderate with bensulide, and slight with tri-calcium arsenate. Yet only slight injury had occurred with benefin, bensulide and terbutol the first year of treatment. The study indicates that care should be taken in using (primarily pre-emergence) herbicides on Tifgreen golf green turf, with buildup of injury very likely under repeated use.

PRAIRIE, ABOVE AND BELOW GROUND

Bokhari and Detling, Colorado, reported to the annual meeting of the Ecological Society that shortgrass prairie contained up to 60% of its biomass below ground when not irrigated (even though fertilized), while most biomass and carbohydrate content occurred in the above-ground portion when the prairie was irrigated.

IBDU TOXICITY

Investigations in Florida, by Volk and Dudeck, on toxicity from use of IBDU applied to ryegrass, are reported in the May-June Agronomy Journal. IBDU used at approximately five pounds N/M resulted in prolonged off-coloration of the ryegrass, not noted with other nitrogen sources (such as ureaform and SCU). The authors conclude that not more than two kg N/are (somewhat over 4 lb/M) should be used with finely ground IBDU, if visual toxicity symptoms are to be avoided.

AIR POLLUTION AND TURFGRASSES

Dr. Youngner, California, discusses the effect of air pollution on turfgrasses in Vol. 25, No. 4 of the California Turfgrass Culture (fall, 1975). The familiar northern lawn species show moderate susceptibility to smog injury, except for ryegrasses which are more highly susceptible. Individual bluegrass cultivars reveal differences; Newport and Fylking show only slight injury from PAN. Glade and Baron show high injury from PAN, but only moderate injury from ozone. Youngner suggests that it should be possible to breed smog resistance into new cultivars.

SNOWMOBILES ON BLUEGRASS

A study by Foresman et al, Wisconsin, examined the effect that snowmobile traffic had on Kentucky bluegrass over a three year span. Aside from delayed spring recovery, there was apparently no damage inflicted beneath the tracks used by snowmobiles. The research was reported in the Apr.-June Journal of Environmental Quality.

GRASS ECOTYPES

Another instance of ecotypic variation in a grass is reported by Clary, Arizona, in the autumn 1975 issue of Ecology. Collections were made of Sitanion from a variety of habitats involving differences in elevation and annual precipitation. Moved to a common environment (transplant garden and growth chamber), the ecotypes behaved in accordance with the locations from which they came. Plants from warm, dry habitats flowered early and produced little dry matter; plants from habitats with moderate temperature and moisture flowered late and had high dry matter production; etc. Flowering dates differed by as much as two months.

FLORIDA RESUME ISSUED

A special report dated January 1976 surveys Florida turfgrass. Turf maintenance and establishment was equivalent to 24% of the 1974 cash receipts from the sale of all farm commodities in the state. In this respect it ranked second only to the citrus industry. The main expenditures were for equipment and labor.

Home lawns were overwhelmingly the most important category, with five times the acreage maintained on highways and ten times that maintained on golf courses. In terms of replacement costs home lawns again led by far (0.6 billion), with golf courses only one eighth as much, and schools third at approximately one twentieth as much.

Bahia and st. augustine grasses together account for about 80% of the acreage, with centipede third (11%). Bahia dominates highway use, while st. augustine accounts for most home lawn turf (although bahia is increasing rapidly).

C₃ and C₄ GRASSES IN NORTH AMERICA

Stowe and Teeri, Chicago, investigated distribution of the "more efficient" C₄ and the "less efficient" C₃ grasses in North America. The parameter most closely linked to the type of photosynthesis was minimum temperature in summer; C₄ grasses are found where minimum summer temperatures are high. Crabgrass and most southern species are C₄. The research was reported to the annual meeting of the Ecological Society.

CENTIPEDEGRASS COLD TOLERANCE

Johnston and Dickens reporting in the Jan.-Feb. Agronomy Journal, show that centipedegrass can be hardened off in as little as two days, but loses cold tolerance equally quickly during a winter warm spell.

LOW VOLATILITY OF AMINE 2,4-D CONFIRMED

A report by Grover, Saskatchewan, in the January Weed Science, confirmed the low volatility of the amine form of 2,4-D. Comparing high volatile esters, low volatile esters, and amine salts respectively, the ratios were 440-33-1. Iso-octyl esters also showed very low volatility.

FERTILIZER CONTRIBUTION IN RAINFALL

Investigations in Iowa, conducted by Tabatabai and Laflen, reported in the Jan.-March Journal of Environmental Quality, show that precipitation annually contains upward of ten pounds of nitrogen per acre, and over thirteen pounds of sulfur. pH averaged about six, and only seldom was as low as 4. Very little phosphorus was found in precipitation. Sulfur content was higher in autumn and winter than in spring and summer, but ammonia and nitrate nitrogen measured about equally throughout the year.

C₄ PLANTS LESS DIGESTIBLE

Although C₄ vegetation contains abundant nutrients in the bundle sheath cells, these are essentially indigestible (using grasshoppers as the test herbivores), according to research by Caswell and Reed, presented to the Ecology Society. Crabgrass and most southern lawngrasses are C₄ species.

TALL FESCUE AS TURF

A study by Burns, Georgia, reported in the March-April Agronomy Journal, shows that tall fescue used for turf holds up well in spite of mowing. With adequate fertilization it made acceptable cover even at lower mowing heights (at 1/2 and 1 inch, as well as the more usual 2 inches).

WEED RESPONSE TO SOIL FERTILITY

Studies by Hoveland, Buchanan and Harris, reported in the March issue of Weed Science, show significant response of certain weeds to soil phosphorus and (to a lesser extent) potassium. Among possible lawn weeds responding well to phosphorus were chickweed and pigweed; under P deficiency they were severely stunted and turned a reddish-purple color. Wild mustard and Poa annua were the most responsive cool-season weeds to potassium; K deficiency caused severe stunting. Plantain and dock were quite tolerant of low K concentrations.

FERTILIZATION AND MOVEMENT OF HEAVY CATIONS

Giordano and Mortvedt, Alabama, report on research investigating the mobility of heavy metals where sewage sludge and nitrogen is applied to soils, in the Journal of Environmental Quality (April-June issue). Contrary to what has been theorized they found no appreciable movement of heavy metal contamination downward in ground water related to any form of nitrogen fertilization.

INTERNATIONAL JOURNAL

An international turfgrass journal published in Germany, Rasen-Grünflächen-Begrünlungen, is now trying to develop an American audience. A complimentary copy was received in May. Articles appear in various languages, most of them in German, however; but all carry summaries in German, English and French.

In the first issue for 1976 tests were reported upon in which sludge used in an artificial rooting medium gave good results. A second article examined organic matter in soil.

A report from Teheran, Iran (in English) compared bluegrasses (including Merion, Newport, Baron and Monopoly), various fine fescues, ryegrasses, creeping and Colonial bentgrasses, and bermudagrass, some of them in mixtures. The bluegrasses proved outstanding (little difference was noted between cultivars), and bermudagrass was good through summer. Mixtures did not do so well as the individual (bluegrass) cultivars; ryegrasses, fescues and bentgrasses were mostly failures.

Timothy was shown to have the most consistent "vitality" (no seasonal depression) compared to bluegrass, perennial ryegrass and bentgrasses in Germany. Other discussions involved shrubs for ground cover, and a review of international turfgrass literature.

SEWAGE SLUDGE FOR SOD PRODUCTION

Burns and Boswell, Georgia, report in the March-April Agronomy Journal, on studies concerning the use of sludge for the production of sod from bermuda, centipede and zoysia grasses. In general sludge treatments were inferior to planting in soil alone, particularly when sludge from an industrial source (presumably containing heavy metals) was utilized. Sludge from a residential area was not so inhibitory, but offered little advantage over sowing to untreated soil.

GRASS PERFORMANCE IN ENGLAND

Dr. J.P. Shildrick, Sports Turf Research Institute, Bingley writes about "Grass Mixtures" in the February 1976 Parks, Golf Courses and Sports Grounds. He cites a survey in which grounds managers rated "wear resistance" as the most important consideration in turf maintenance. Wear tolerance has been investigated utilizing artificial forces ("laboratory" comparisons), and under actual use at Bingley. In both cases seed mixtures containing perennial ryegrass (especially the cultivar Manhattan) provided the better wear. After two years use a mixture of approximately one third each Manhattan ryegrass, fine fescue, and timothy showed decidedly the least bare ground (and conversely the highest percentage of sown species remaining). A combination principally of Sydsport bluegrass (80%) and timothy (20%) was a comparative failure. Wherever Manhattan was included, results were markedly improved, and the remaining percentage of sown species showed the survivors to be principally perennial ryegrass.

Dr. Shildrick recognizes that results depend partly upon the age (how well established) the turf is, for example, Kentucky bluegrass would show to better advantage as the turf matured (and revival from rhizomes was brought into play, compared to timothy or other bunchgrasses that produce no rhizomes). While wear tests show fine fescues and bentgrasses (Highland) not to wear very well individually, they do provide a helpful underlayer that is useful in grass mixtures. Also useful is annual bluegrass, particularly the dense volunteer types (available seed, largely from Denmark, seems to contain mostly lanky, less-dense ecotypes). Shildrick surmises possible advantages from having "impure" bluegrass seed containing annual bluegrass, although the trend within the EEC is towards production of bluegrass seed mandatorily completely free of Poa annua; after June only named cultivars can be sold within the EEC, no "common" bluegrass.

WEIBULL'S "GRÄS-TIPS" APPEARS

The December issue of Gräs-tips was received from Sweden in May. The text is in Swedish, but English summaries are given.

In a study of fine fescues, by Nilsson, experiments were made with variable photoperiod. Longer day length resulted in greater volume of rhizomes with the creeping fescues. The author finds that contrary to common opinion, the "rubra" subspecies (creeping) don't always have a chromosome number of 56, but that some very strongly rhizoming types have the "commutata" (Chewings) chromosome number of 42. Is the distinction between rhizoming and non-rhizoming fescues artificial; do some Chewings fescues spread as adequately as the creeping ones?

Other articles deal with damage to turf by traffic or snow removal when the grass is frozen. Winter diseases in Norway are discussed, and brownpatch on Swedish golf greens (which seems to prevail even at temperatures said low enough to restrict the disease in North America). Another story laments the limited use of grass in Japan, where courtyards and playing fields are mostly paved, all of which has a "restricting" influence on the psyche.

Torstensson examines microscopic life in the root zone of turf. A one hectare grass field, to a 15 centimeter depth, contains 20 tons of bacterial-type organisms, 4 tons of earthworm-types, and one ton of arthropods (mainly insects). The usefulness of microorganisms in recycling plant detritus, nitrogen fixation, and symbiosis are discussed.