BETTER LAWN--HARVESTS

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BETTER LAWN & TURF INSTITUTE

991 WEST FIFTH STREET
MARYSVILLE, OHIO 43040
PHONE: (513) 642-1777

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AS THE YEAR ENDS

As this issue of Harvests goes to press, we're looking foward to our annual meeting being held in conjunction with the ASTA Convention in Houston, Texas, July 2 (a report on which, falling as it does in the next quarter, will be carried in Volume 22, Number 3 of Harvests). We feel the year has been quite successful, with a reasonably full program being carried out in spite of inflation and recession. The Marysville staff is very grateful for the leadership President Osburn has provided, and the willing attention to detail that Secretary-Treasurer Russell is constantly beset with. Doyle Jacklin, Vice President, has been most helpful with his counsel, as has the Variety Review Board chaired by Dr. Gerald Pepin. We thank all trustees for their support and enthusiasm.

As a general resume for the year, Dr. Schery's report to the board of trustees at the annual meeting, is included on the following pages, for the record. This provides an overall summary, details concerning which appear in the quarterly Harvests issues. The fiscal year ending was marked by widespread usage of reprints, a very economical means of getting the "Institute story" across. Several reprints underwent their second and third reprintings, being utilized in member firms, and especially by a continuing program of offerings to individuals sending in a self addressed, stamped envelope.

The Marysville staff takes this opportunity to thank members and supporters, one and all, for the confidence and cooperation shown during the fiscal year.

QUARTERLY RELEASES

In press, published or initially reprinted during the quarter:

American Horticulturist	"Lawn Basics"
American Horticulturist	"Let's Not Fritter Fertilizer"
Ecological Society Bulletin	"World Caretaker"
Garden Supply Merchandiser	"The Lawnseed Industry"
Horticulture	"Basic Lawn Care"
Horticulture	"A Baker's Dozen of the Worst Lawn Weeds"
Landscape	"The New Look To Lawns"
Ohio Turfgrass Proceedings	"Trends In The Fine Turf Field"
Seed Trade News	"The Lawn Institute Says -----", etc.
Seed World	"Lawn Grass Issue", etc.
Turf-Grass Times	"New Lawn Varieties"

DIRECTOR'S ANNUAL REPORT

FISCAL YEAR 1974-75

It is gratifying to summarize the year-long activities once again, for trustees taking time from their busy schedules to meet here in Houston. I feel it has been a successful year for the Institute; many years of experience have taught us most of the shortcuts, and I believe we run an efficient operation. That we service a significant "clientel" in a credible fashion is attested to by the exhibits which will be circulated shortly. The effective group of officers which this board habitually elects, enables us to minimize bureaucratic drain and run a pretty "taught ship". President Osburn is well versed in the turf products field, and exercises his commonsense unselfishly. Secretary-treasurer Russell devotes hours to keeping records, and additionally proves to be an excellent "arm twister". VP Jacklin provides thoughtful insight from the vast seed producing region. Dr. Pepin has chaired the Variety Review Board astutely and diplomatically. These principal officers are, I know, as grateful as am I for the encouragement all trustees lend the Institute. Thank you, one and all.

In the course of the year we have continued to publicize the better lawngrasses and topflight materials for their care principally through the familiar channels of newspaper, magazine, TV and personal appearance. Spot checking indicates that we continue to have an enviable reputation as a source for reliable information, with a loyal following among garden writers, editors, educators and turfgrass professionals. The spin-off from press kit and magazine stories continues to be amazing, resulting in exposure vastly beyond what could be purchased as advertising space even if our entire income were devoted to it. Moreover the "quality" is far greater, the message more convincing, seconded as it is by editorial approval. Cumulatively our "presence" continues to mount, as books, stories, and encyclopedic contributions become part of the record and are used for reference. I have hopes that in the year ahead new opportunities may arise for additional authorships, possibly to include inexpensive booklets offered reading-rack style (at least we have had a feeler about reissuance of 10 Frequent Lawn Problems, and Selecting Lawn Grasses).

Great use is made of reprints photocopied inexpensively. Members use these as envelope stuffers, and as handy guides for the sales force. They also are given out as a take-home reminder at personal appearances. They lend authority to our press kits, from which they are often recopied still another time. Especially do we take advantage of them to answer inquiries. A great deal of interest is generated through the offering of informational leaflets to persons sending in a self-addressed, stamped envelope; during the year a consistent run of such inquiries has occurred, marked by spasms of special interest when an offer has appeared in a prominent newspaper, or following a television appearance (hundreds of envelopes come the day or two following appearances on "The Morning Exchange", Cleveland). About 300 titles have now accumulated, and these reprints represent a flexible means for filling many needs. Combined with recommendation by prominent editors (our corps of "friendly salespersons"), we have developed a gratifyingly simple but efficient means for reaching a mass audience.

PRESS RELEASES

Press mailings for the year included the familiar autumn and spring packages, units of which are sent to each of you, and the joint Supplement (co-sponsored with The American Association of Nurserymen, National Arborist ASsociation, and National Swimming Pool Institute). Half the tab for the latter is picked up by the Lawn and Turfgrass Division of the ASTA. Additionally, this year, we were pleased to have a suggestion from Peter Loft that something was needed to counteract an idea prevalent in the eastern marketing region, that the newer turfgrasses are a demanding lot so far as scarce and expensive fertilizer is concerned. We made a spearate late spring mailing to our newspaper and TV friends of New Bluegrass Not Greedy For Fertilizer, and the Loft Seed Company additionally underwrote distribution to a technical audience of experiment station personnel and other specialists. Our autumn press kit probably contained 18 or 19 pages with 3 or 4 back-up reprints (when I asked Mrs. Ebright to make a tally on this, we found that our last kit had been distributed; if any member should still have an Autumn 1974 issue handy, we would welcome having it back to fill the records gap). The Spring Press Kit contained 18 pages of text, including 27 titles, and 3 reprints (Leaves Of Grass For Any Setting, from Parks & Recreation, Starting A New Lawn/Improving An Old Lawn, from Flower and Garden, and Non-Farm Fertilizer Use from Horticulture). Our autumn 1975 press folder is already in production, and will include 19 pages, 29 titles, and 4 reprints (Your Lawn, A Man-Made Ecosystem, from the New York Botanical Garden Journal, New Varieties For Fine Turf, from Seedsmen's Digest, New Lawn Varieties - Bane or Boon? from Turf-Grass Times and Basic Lawn Care from Horticulture).

The joint Supplement is on the agenda for further discussion later in this meeting. This year, under aegis of the American Association of Nurserymen, production was taken from the Pflaum organization (involved in its production the several preceding years) and given to Paul Dawson and Friends. After initial difficulties that involved serious underuse of our contributions (which, among other things, resulted in unbalanced coverage), matters were reasonably straightened out. This "clip-sheet" newspaper format went to over 3,000 papers, house organs, and syndicated outlets. As yet we have not had a report on comparative usage, which would be indicated by requests for the photographs offered. But I do feel satisfied that such a Supplement provides a way to reach a newspaper audience which our own press kits may not reach. Institute press kits are designed chiefly for newspapers and magazines having editorial talent, usually a garden writer. They prefer to use our materials in composition of their own columns. Results appear on major, pace-setting garden pages having large metropolitan readership, Our select (and frequently winnowed) mailing list runs to less than a thousand names, (a considerable savings, considering that press kits now cost in the neighborhood of $1 each). The Supplement, in contrast, goes to small newspapers and outlets that we cannot afford to serve ourselves, and which usually prefer to insert prepared material in column format without editorial attention. With four associations sharing the cost, it is possible to make this more extravagant mailing, and to offer free photo illustrations. You will remember that multiple copies of our own press kits go to extension personnel in several states for redistribution to county agents, and to firms such as Hercules for redirection.

It has been impractical to have our press releases monitored by a clippings service. But from the sampling of newspapers that we do see we know that the stories get used. By way of example tear sheets from several newspapers are being circulated. Note, for example, that the St. Louis Post Dispatch gardening section for April 11 carried 14 items from the press kit. Surprisingly, press kits seem to find favor with TV. Stations having gardening specialists or similar programing occasionally commend us and ask if I might be available for interview? TV-radio mailings have been limited, but so long as the demand can be serviced without special production (i.e. by the same press kits mailed to newspapers), this is perhaps an area that invites expansion?

PUBLISHING

Magazine stories prepared during the year are itemized alphabetically by publication) below. Forty seven titles were involved, and of course many of these received additional coverage through reprinting in other publications. Of course their reach was extended through our own distribution of reprints. Office records indicate that approximately twenty thousand reprints of the various stories were printed during the year, used for the purposes mentioned in my opening comments. The pattern was similar to last year, summarized at some length in the 1974 annual report (Harvests 21:2). As was noted there, many items become references, such as in the proceedings of turfgrass conferences or upon request from libraries and vocational colleges.

American Cemetery	New Lawngrass Varieties Are Less Disease Prone
Agri-fieldman	Discussion and offer of variety listing
American Hort. Society, "News and Views"	ibid.
American Horticulturist	Lawn Basics, Let's Not Fritter Fertilizer
Bull Sheet, (Midwest Golf Course Supts.),	The Future For Fertilizer
Cappers Weekly	The New Look To Lawns
Careers, Inc.	(Guidance Folder)
Elks Magazine	A Lawn's Not All That Bother
Ecological Society Bulletin	World Caretaker
Flower and Garden	Starting a New Lawn/Improving An Old Lawn
	Lawn Quake
Gardener's Catalogue	Spring Lawn Preparation, Northern Lawngrasses
Garden Supply Merchandiser	The Lawnseed Industry
Garden Writers Bulletin	Lawn Care, Month by Month
Golfdom	About Fertilizer And Feeding The World
Greener Gardening Easier	New Lawn Grasses
Grounds Maintenance	literature offer
Horticulture	Basic Lawn Care, A Baker's Dozen of Worst
	Lawn Weeds, Non-Farm Fertilizer Use
Hardware Retailing	New Varieties Change Lawn Care Outlook
Hortus III	section on lawns
House Beautiful	Timely Turfgrass Topics
Iowa Golf Course Supt. Reporter	Turfgrass Varieties for Fall Seeding
Inter. Turfgrass Re. Conf., Proceedings	Quality of Lawnseed on the American Market
Landscape	Spring Lawn Preparation, The New Look to Lawns
Massachusetts Turf Bulletin	Comments on Lawngrass, Strange Names In Lawnseed Mixtures
N.Y. Botanical Garden Journal	Your Lawn: A Man-Made Ecosystem
Ohio State Univ. Turfgrass Proceedings	Trends In The Fine Turf Field
Outdoor Power Equipment	What Are You Going To Do For The Lawn
Parks & Recreation	Leaves Of Grass For Any Setting
Seedsmen's Digest	New Varieties For Fine Turf
Seed Trade News	numerous titles
Seed World	numerous titles
TIE	Ecology and Agriculture
Turfgrass Times	New Varieties, Bane or Boon?
Weeds Trees & Turf	Cool Weather Weed Control, Lawn and Garden
	Fertilizer No Solution For World Food Shortage

MISCELLANEOUS ACTIVITIES (Continued)

letters are received at the Marysville office as a result of mention on the program of reprint availability. This spring one gentleman traveling through the Cleveland area happened to tune in on the program at his motel, and drove all the way to Marysville to discuss in person his particular West Virginia lawn situation.

Dr. Schery continued to serve as senior author in preparation of the lawn maintenance slide sequence for the Turfgrass Slide Monograph being sponsored by the American Society of Agronomy. Text for this was finalized, and a few slides furnished. The photographic library, used for personal appearances, and for dressing up of magazine stories, continued to receive attention, and photographs were made available to several authors who will credit the Institute. All varieties on our VRB listings are grown on the Institute grounds, as are others for comparison, or which are candidates for the future. Turf suited to photographing is maintained, as are landscaped "scenic" areas. Wtih the tightening of fertilizer supplies a low maintenance program was initiated, to see how well varieties perform with only moderate attention: so far the results have been encouraging.

We have been touch with Mr. Skaptason, chairman of the (Product Review Board) committee looking towards the possibility of a "seal" suited for products other than lawnseed. A story, Cool Weather Weed Control, was prepared for Weeds Trees & Turf on late season use of Trimec. Cooperation was extended the Fertilizer Institue, in preparation of several stories opposing restrictions on non-farm fertilizer usage. The "Seal of Approval" for lawnseed continues to be administered, with about 7 firms participating. Maintenance of office facilities and storage of necessary supplies was normal, with no unusually large expenditures during this fiscal year. Marysville office costs (other than staff salaries, which are included in the Secretary-Treasurer's report) run approximately as follows:

Basic space (rent, insurance, utilities, etc.)	$2.5 M
Travel	$2.0 M
Office supplies, including postage	$1.7 M
Joint projects ("Supplement")	$1.5 M
Misc-items (subscriptions, dues, services, etc.)	$1.0 M
Hired labor (grounds & storage)	$0.5 M
	$10.7 M
Donation Oregon Seed Trade Association	$1.0 M

Earl Aronson, AP, continued to favor the Institute with credited use of our materials in his nationally syndicated column. Suburban Newspapers of America requested, and was furnished through the good offices of the Am. Assoc. of Nurserymen, 400 additional copies of the Supplement for use by papers in the chain. The Marysville staff has continued to cooperate with Career Guidance, a national firm preparing literature for secondary school students, reviewing and contributing to brochures in the landscaping and grounds care fields. And last but not least I am pleased to remind you that Mrs. Jane Ebright has joined the Institute as Marysville office manager, replacing Mrs. Rudeen. She, too, presents her regards, feeling that she knows many of you "personally", so often has she addressed envelopes to you.

PUBLISHING (Continued)

Books and contributions to encyclopedic works by Dr. Schery continue to serve the Institute well. There is reasonable expectation of a second printing of A Perfect Lawn, and of preparation of a new book on lawns with a different publisher. Appearances in the Journal of the New York Botanical Garden, and the Handbook On Lawns by the Brooklyn Botanic Garden, have brought in requests from many parts of the country, opening channels of communication with environmentalists and outdoorsmen as well as gardeners. Dr. Schery serves as liaison representative for the Crop Science Society of America to The Ecological Institute, initiating communication with these tangential fields. Marc Cathey, newly elected president of the American Horticultural Society, has requested an in-depth lawn-making review for the American Horticulturist this autumn. The Institute continued to work closely with horticultural and professional societies, and wtih industries having similar interests. Dealing with such influential groups is an important on-going activity. A literature exchange is conducted with turfgrass professionals, through the good offices of the Agronomy Society, on an intermittent basis.

MISCELLANEOUS ACTIVITIES

One of the more time-consuming activities of the office staff is the handling of routine correspondence. Much of this can be abbreviated through the use of reprints, but inevitably there are inquiries requiring custom attention. You will recall that the Institute is listed in several national source books (e.g. American Garden Guild's "201 Valuable Free things ---", in American Horticultural Society and other publications), as source for literature on lawns in exchange for a self-addressed, stamped envelope.

Dr. Schery made several appearances or attended conferences during the year, among them:

Annual meeting, St. Paul, Minn. (with a side visit to Univ. of Minn., Dr. White)
Am. Assoc, Bot. Gard. & Arb. Garden Writers regional meeting, Mansfield, Ohio
Producint areas Washington-Oregon, visit research centers with Dr. Thorne (consultation with VRB chairman Pepin)
American Society Agronomy Annual Meeting, Chicago
Ohio Turfgrass Conference, Columbus, Ohio
Ohio Nursery Short Course, Columbus, Ohio
University of Florida, Fort Lauderdale, (Dr. Evert Burt)
Massachusetts Turfgrass Conference, Hartford, Connecticut
WEWS-TV, Cleveland, Ohio, "Morning Exchange" Show, August and April
Greene County "tornado recovery" workshop, Xenia, Ohio
Columbus Rose Club, Columbus, Ohio
Ohio Nature Conservancy, Portsmouth, Ohio

Particularly of interest this year was an hour-long presentation via telephonic "conference call" to a symposium of midwest garden center owners and operators. Non-farm fertilizer usage was discussed on an open line to Madison Wisconsin. Seated at his desk Dr. Schery was thus able to deliver first a "lecture", then field questions from the floor and engage in discussion. Such an arrangement saves considerable time and travel costs.

Appearances on the "Morning Exchange" program (WEWS-TV, Cleveland), proved highly successful, as they had in the past. A few slides are shown, followed by a short interview with the MC, after which questions telephoned in by the TV audience are answered. Invariably the lines are jammed, and in the days following the interview hundreds of

IN AMERICAN HORTICULTURIST

The Institute story, "Let's not Fritter Fertilizer", appeared in the late spring issue of the American Horticulturist. The American Horticulturist has become an increasingly more powerful voice for horticulture, since the American Horticultural Society acquired the Mt. Vernon headquarters and has undertaken vast reorganizations. We are pleased to have the story appear in this prominent horticultural publication. It emphasizes how important is fertilizer to the American urban environment, for maintenance of turf and ornamentals. The relatively small amount of fertilizer so consumed could scarcely accomplish as much if channeled instead to agricultural usage in parts of the world where the economics and limitations are far different.

IN TURFGRASS TIMES

The March-April issue of Turfgrass Times carried the comment "New Lawn Varieties - Bane or Boon?", in which Dr. Schery counters some of the "complaints" about having "too many" new lawngrass varieties. While some confusion does exist, Dr. Schery feels that this is a small price to pay for the improved quality and broader scope that the new varieties provide.

WEED CHART APPEARS

"A Baker's Dozen Of The Worst Lawn Weeds" appeared in the May issue of Horticulture magazine under Institute auspices. The article was in chart form and dealt with both grass-type and non-grass weeds. The problem that each presents is epitomized, control discussed, with any special cautions or hazard reviewed. Reprints have been sent the membership.

1975 LAWN CARE REVIEWED

Under the title "Basic Lawn Care", an Institute story appeared in the May issue of Horticulture magazine (Massachusetts Horticultural Society). Starting a new lawn was first discussed, - "the quality of the seed you plant will have a profound influence." Several species encompassed by Institute cultivars were recommended. Mowing and fertilizing are pivotal procedures, - "The best lawn fertilizers release nitrogen slowly ---- the most familiar of these gradual-release nitrogen sources is ureaform, ------". Weed control is a necessity with almost every lawn, and combinations with 2,4-D are recommended, - "A formulation of 2,4-D, MCPP and dicamba has been patented as Trimec which is a synergistic combination ---".

IN SEED TRADE NEWS

The April 23 issue of The Seed Trade News carried the Institute release "The Lawn Institute says new grasses do not require heavy fertilization". The story attempts to counteract fears about using new varieties because of imagined high fertilizer requirements in an era of rising fertilizer prices. Gradual-release nitrogen is suggested for steady color.

THE "GOOD WORD" FROM LONG ISLAND

The cooperative extension service of New York state reports as follows: "Crabgrass A Bygone Pest? 10 years ago, crabgrass was the most troublesome weed in lawn and turf areas. Today if you mention crabgrass to people in the neighborhood, everyone will know you are a newcomer. What has made this happen? First of all, a larger portion of the lawns have been seeded or sodded with new improved grass varieties which are more vigorous and dense."

INSTITUTE ITEM IN SEED WORLD

The April "Lawn Grass Issue" of Seed World carried an Institute story adapted from the press kit, "Hit Paydirt in Your Lawn Seeding". This referred to the necessity of removing thatch before seeding, so that new seed would strike mineral soil.

IN LANDSCAPE MAGAZINE

"The New Look to Lawns" was an Institute story appearing in the May issue of Landscape. The story attempted, in light-hearted fashion, to note the progress that has come in recent years, especially due to the many fine lawn cultivars bred and released. In reprinting the story an abbreviated boxed insert listing Lawn Institute Variety Review Board acceptances was included. The list accompanied the story, but was omitted by the editors because many of the varieties named are not yet permitted to be sold in Canada.

COVER PHOTO

The cover photograph of the June issue of Nassau Living, publication of the Cooperative Extension Association of Nassau County, New York, was from the Institute library.

STORY APPEARED

Some months ago a story was prepared for The Elks Magazine, entitled "A Lawn's Not All That Bother". Inquiry to that magazine indicates that the story was used, in the September issue of the magazine, excerpted under the heading "Greening Time Again". The Lawn Institute is mentioned, and each of the species represented by sponsoring varieties receives a paragraph pointing up the ways in which it is useful.

SEED WORLD STORY

The May issue of Seed World carried the Institute release "New Bluegrasses Not Greedy For Fertilizer". This release, partly sponsored by Loft's Seed Company, was made in late spring to help counteract resistance to new varieties "because it would cost too much to maintain them".

P K STORIES APPEAR

Since a clipping service is not practical for Institute releases, we monitor press pickup as best possible from newspapers customarily seen. It is thus pleasant to report that the Friday, April 11, issue of the St. Louis Post Dispatch carried 14 of our press kit items in the "Home Gardening" section. None of the items received by-line credit, although the Institute, and of course the grass varieties, were consistently mentioned in the text. The headlines given by the newspaper were: "Kentucky Blue A Stout Grass", "Deveolping Lawn Grass", "Shaded Lawns Call For Special Care", "Seed Mixture Best For Lawns", "Instant Cover", "Grasses Adapt To U. S.", "Grass Varieties", "Standard Care Repairs Winter Lawn Damage", "Seed Approval", "Bluegrass Lives", "Good Time For Mowing", "Dual Purpose", "Thick Covering", and "Varieties Of Grass Developed At Schools".

COLUMBUS ROSE CLUB PRESENTATION

On April 2, Dr. Schery distributed to the evening meeting of the Columbus Rose Club, along with his presentation, these reprints: "New Varieties For Fine Turf', "Starting A New Lawn", and "Spring Lawn Preparation".

REPRINTS DISTRIBUTED

We are pleased that Cyclone Seeder is distributing through their marketing channels, 2,000 copies of the reprints "LawnQuake" and "A Man-Made Ecosystem Your Lawn". We are gratified with this fine help by one of our members.

TV APPEARANCE

Dr. Schery represented the Institute as guest on the "Morning Exchange" program, WEWS, Cleveland, on April 9. Colored slides were shown depicting up-to-date grasses and their method of care, after which lawn care was discussed in general, and questions telephoned in by the audience were fielded. As in the past, response was extremely gratifying, 200 stamped-envelope requests having been received for the two reprints ("New Varieties For Fine Turf: and "Keep Page") mentioned on the program.

Mr. Mack Phillips, traveling for the O-E-M Co., Huntington, West Va., picked up the program at a Cleveland motel; he showed up at the Institute office in Marysville the next morning, 140 miles from Cleveland, to further discuss his lawn.

ASSIST NEW GARDEN CLUB

A request from Charles Roos, president, of the newly formed "Illinois Bell Telephone Gardening Club" asks for such information as the Institute can lend. The new garden club has been offered reprints, and an economical price on remaining copies of Householders' Guide To Outdoor Beauty.

HARVESTS REPORTS INSTITUTE ACTIVITIES

During the fiscal year 4 issues (Vol. 21; nos. 3 & 4: Vol. 22, nos. 1 & 2) reported in detail on Institute activities, and should be consulted for the running record. These numbers totaled 68 pages for the fiscal year, the issues appearing quarterly.

WHAT THEY'RE SAYING

"Dear Bob, - Just a note to express my personal thanks to you for taking time from your weekend to be with us for our 'Plant Greene Green' workshop. --- Based on my observations and the comments from those in attendance this was by all odds, the best of the day." ---- Ralph E. Ramey, Director, Glen Helen

"Again, many thanks for joining us. You were excellent as always. Hope you had a nice response to the phamplet." ---- Susan Smetana, Executive Producer, The Morning Exchange, WEWS, Cleveland.

TECHNICAL SECTION

MICHIGAN TURFGRASS CONFERENCE

The Institute recently received the 1974 Michigan Turfgrass Conference Proceedings. A few highlights may be of interest to those who have not scanned the Proceedings.

Response of several turfgrasses to wear was examined. Manhattan ryegrass, Merion bluegrass, and Kentucky 31 tall fescue had a better record than did annual ryegrass, fine fescues, or Poa trivialis. In a study on the effects of shade, it was shown that bluegrass grew more erectly (thus lost more green leaf) as light intensities decreased than did red fescue; ergo, fescue had the advantage for shade.

In variety ratings through 1972, Nugget rated most highly among the bluegrasses, followed very closely by Adelphi, Sodco, A-20, Galaxy, Baron, Bonnieblue, A-34 and Merion. Dawson was the leading fine fescue, followed by Golfrood, Highlight, Jamestown and Wintergreen. Emerald was the leading bentgrass, followed by Penncross.

Several reports on disease control are given. A number of fungicides help control dollar spot; fusarium blight seems better controlled by nematicides than by fungicides, if applied early enough in the season. Triarimol and Tersan SP were far the best Typhula snow mold preventives.

One of the rare instances of potassium deficiency resulted after 7 years of nitrogen fertilization (without potassium), the clippings removed. The grass assumed a grayish-blue color, wilted, thinned. This can be a problem on frequently irrigated, sandy soil. Other reports indicated the desirability of adequate potassium for prevention of disease.

In the golf course sessions, Vargas cited leafspot as the chief fairway problem, and suggested its control by the introduction of disease-resistant cultivars. Bob Peterson, Burlingham, spoke on "Seed Selection and Quality for Lawns", citing an Institute report. Jagschitz, Rhode Island, reviewed weed control, recommending familiar treatments.

Goss and Gould, Washington, noted the influence of nutrients on pests (increased nitrogen caused more Fusarium, Corticium red thread, and Helminthosporium; but less Ophiobolus). Adequate phosphorus helped reduce Fusarium, Ophiobolus and Corticium, as did adequate potassium. Sulphur had the most remarkable influence: it helped color, no matter other treatments; it eliminated Ophiobolus, and reduced Fusarium; it controlled algae; it eliminated earthworm activity; it kept turf free of Poa annua (at higher rates) if phosphorus was limited (even with moderate phosphorus applications, Poa annua was not abundant). The turf was bentgrass, at Washington State University, and such control of Poa annua is highly desirable in humid regions.

Jagschitz reported that there is some detrimental effect to the rooting of sod if herbicide treatments (especially pre-emergence crabgrass prevention, except for siduron) are used as closely as two weeks before or after the transplanting of sod. Beard could find no difference in the rooting of sod whether from muck or mineral soil-beds, although that used for athletic fields should be from mineral culture to prevent "shearing" that a change of soil medium encourages. He suggested that sod being produced for shaded locations could get by with as little as 10% Merion (90% fine fescue), and that whatever the percentage of Merion this would be gradually eliminated

MICHIGAN TURFGRASS CONFERENCE (continued)
by mildew, giving the fescue an advantage. In the sod fields it is well to keep fertility levels low to prevent the bluegrass overwhelming the fescue.

In transplanting to shaded locations placing fescue seed under the sod had no effect, but overseeding onto the top of the sod (given sufficient irrigation) resulted in a nice partial stand of fescue. Bluegrass cultivars having excellent sod strength were Nugget, Baron, Pennstar, Sydsport, Fylking and Sodco; common types were unsatisfactory. Research indicates that the mowing of commercial sod can be let go for a number of weeks under emergency conditions (fuel restrictions) without permanent damage, if the eventual mowing takes place under favorable growing weather.

OHIO CONFERENCE PROCEEDINGS

Proceedings for the Ohio Turfgrass Conference of December, 1974, appeared in mid-April. As noted in a previous harvests, this was a well attended affair with a broad program and numerous exhibits. Highlights from the proceedings that may be of some interest to members follow:

Martin, Ohio, recommends basagran (at about 1 pound per acre) for selective nutsedge control. Saladini, Ohio, states that 3 new species of Pythium (rather than the traditional supposed causal agents) may be responsible for the blight in Ohio. Larsen, Ohio, notes that in 1974 neither leafspot nor Pythium were prevalent enough to make meaningful tests, but that dollarspot was epidemic (all recommended fungicides were effective in controlling dollarspot, including the systemic benlate).

Saladini rates the bluegrass cultivars (Columbus) according to their susceptibility to dollarspot. Nugget was most severely attacked, followed by Sydsport, Fylking, Delta, Campus, Pennstar, Windsor, Prato, Cougar, A-10, Arista, and Merion. Among VRB cultivars, Adelphi and Sodco proved most resistant (common was also little affected).

English, Ohio, compared nitrogen sources on simulated golf green grass. As would be expected, soluble sources provided nitrogen in the leachate rather quickly, "slow-release" sources almost none. Ammonium nitrate and urea showed no residual fertility, but ureaform "had the greatest amount ranging from 79 to 83%. Milorganite and IBDU treatments had less residual fertilizer than UF treatments with a range of 62 to 74% and 51 to 61%, respectively".

Dr. Niemczyk, Ohio, stressed identification of the insect problem and its economic consequences before undertaking treatment on golf courses. He concludes "Among reasons for discouraging further use of these insecticides [cyclodienes] is that the group population may become resistant to them. Also, there is good evidence that the use of these materials result in a rapid build-up of thatch." Drawings distinguish different grubs, and infestations up to 4 or 5 per square foot are not worthy of the cost of treatment. Niemczyk does not specify which insecticides are especially recommended.

Duff, Rhode Island, stressed the importance of keeping soils uncompacted (aerified) for maintaining athletic fields. Lucks stressed service in dealing with customers. Schery reviewed "Trends In The Fine Turf Field". Probasco emphasized accuracy in lawn material application.

OHIO CONFERENCE PROCEEDINGS (continued)

Lefton, Ohio, emphasized fine fescues for dry shade, Poa trivialis for damp. He considers Sodco, Glade, A-34, Victa and Nugget as being shade tolerant. He feels that under high levels of management fescues give way to [improved] bluegrasses. Buscher, Ohio, talked about tree selection, and McVey, Scotts, spoke on "Turf Fertilization In Cemetaries". McVey feels that 3-5 lb. N/M/yr is required for good bluegrass, about half this for fescue. There is little demand for nitrogen immediately on a new seeding, but some nitrogen aids in phosphorus uptake. He feels phosphorus is the key element for young turf, and its availability is limited when soil temperature is cool. Less than 30 lb P/A can be limiting, but at the other extreme excessive P can cause iron deficiency (and may also inactivate other minor elements). The leaching of P is not a problem. Potassium is seldom limiting, but is u ually included in fertilizer for assurance of availability. McVey likes a fescue-bluegrass combination for shade, and thinks that the balance can be maintained by regulating phosphorus (if more than about 2 lb/M/yr should keep the fescue flourishing). A 5-to-1 nitrogen-to-phosphorus ratio is suggested. More phosphorus than this, McVey believes, will encourage bluegrass (and the diseases that attack bluegrass in the shade), necessitating use of fungicides. About 4 lb N/M/yr is necessary for grass to remain competitive against weeds. For new seedings phosphorus should be mixed into the top half inch of the seedbed, where it will be accessible to the roots of seedling grass. One wonders how developments can be predicted this exactly on the basis of fertilizer rates, considering how variable is the native quality of various soils!

Duff, Rhode Island, reviewed sod production in this eastern state, and predicts that the industry may be short-lived there because of industrial demand for the land. Kentucky bluegrass blends are mostly seeded, although mixtures of bluegrass and fescue have been tried (but resulted in lower quality sod).

Wilkinson, Ohio, explained the difficulties of growing turf in shade; more than reduced light is involved, including morphological and physiological changes in the grass. High mowing, moderate nitrogen fertilization, and shade-tolerant grasses are suggested. Thinning of tree foliage, root pruning, and landscaping arrangements that permit some breeziness, should help. Tree roots may inhibit grass aside from competition for nutrients and water. Watering under trees should be only as needed, but sufficient to soak deeply (constant surface humidity will encourage disease). Benomyl and cycloheximide are excellent for preventing disease (primarily mildew) in shade.

Cole, Pennsylvania, said that high nitrogen levels encourage leafspot (which is at its worst when sudden drought follows an earlier cool-wet interval). On the other hand redthread disease seems favored by low fertility. Fusarium is the most damaging turfgrass disease, very difficult to control (it is favored by alternating spells of warm-wet weather and drought - i.e. it responds to grass stress). Regular irrigation may help control it, but this brings in water-loving weeds. Dollarspot becomes worse under low fertility and high humidity.

PROMISE OF SEED GERMINATION "RELEASE"

Research at ARS, Beltsville, reported in Western Landscaping News (May), indicates that scientists are on the verge of finding chemicals which "release" seeds to germinate by nullifying the catalase inhibition. Potassium azide, for example, stimulated the germination of some grass seeds when small amounts were applied to the soil.

VIRGINIA RESEARCH REPORTED

"Plant Protection Results", Information Note 131, discusses the research-demonstration program for the control of weeds and diseases in turfgrasses and ornamentals for 1974 at VPI. The reports are marked "not for publication", and we merely review the gist of the research, not citation of data here.

Various fungicides were observed for controlling diseases on several turfgrasses. It is stated that 4-5 weeks is about as lengthy control as can be expected from a systemic fungicide for dollarspot; heavier rates of fungicide do not sufficiently extend the period of protection to justify the cost. Several treatments were good, but only Plantvax stood out, for control of rust on Manhattan ryegrass. Some phytotoxicity was noted from higher rates of benlate in applications to control Pythium.

Good crabgrass control was achieved season-long with several pre-emergence chemicals, including bensulide (quite effective at 3/4 the normal 10 lb. rate), oxidiazon (3 lb/A), and the stronger formulations of PPG-139 (15-30 lb/A). Hope seems at hand for selective control of nutsedge in turf; certain rates, properly timed, of S-21634, and of Destun, may be the answer.

Synergistic combinations of 2,4-D with other chemicals were very effective in control of broadleaf weeds. RO 7-6145 depressed Merion bluegrass flowering well. The same chemical gave excellent Veronica and chickweed control in Baron bluegrass, and at certain rates restrained the growth of Baron for about three weeks. Glyphosate controlled perennial grasses excellently in preparation of a seedbed for new seeding. Glyphosate appears to have quite a future for lawn renovation, although it is not completely effective on quackgrass. Several chemicals controlled goosegrass well, particularly oxidiazon and certain combinations (including A-820).

LAWNGRASS ADVISORY DISTRIBUTED

Leaflet 509, "Lawngrasses For New Jersey", authored by four wellknown faculty members, has been distributed not only in New Jersey, but through the Cooperative Extention Services of Cornell University, New York. The emphasis is on cool-season grasses (bluegrass, fescue, perennial ryegrass, bentgrass), but the special, limited usefulness of zoysia and bermudagrass is touched upon.

The bluegrasses receive major rating upon resistance to leafspot, with stripe smut indicated to be of next importance. Varieties listed that rate well in both categories are Birka, Bonnieblue, Fylking, Pennstar, Nugget, Sydsport and Touchdown.

The fine fescues are divided into three categories, - Chewings, creeping, and spreading. Banner, Cascade, Highlight, Jamestown, and Koket are all recommended Chewings types, with Dawson and Golfrood (doubtfully available) the only creepers. Illahee, Pennlawn, Boreal, and Ruby are all considered adequate spreading fescues, with Fortress (a Rutgers variety) due to become available, too.

The perennial ryegrasses are rated by quality into three categories, with Citation, Derby, Diplomat, Eton, Manhattan, Nk-200, Pennfine and Yorktown in the top category.

Usefulness of various bentgrasses, tall fescue, and redtop are all touched upon.

FINE TURF IN ENGLAND DISCUSSED

John Shildrick, in the March Parks and Sports Grounds, reviews "What Should We Sow On Our Greens?". The customary seeding mixture in England has been about 20% Highland bentgrass, 80% improved fine fescue cultivar. Shildrick examines each of the species for acceptable varieties, and points out that many combinations have not been well tested for a long enough period to draw conclusions. He favors the Chewings type fescues over the creeping and spreading types, and finds both Highlight and Koket good, Highlight on a year-around basis. He speculates whether any of the bentgrass cultivars are likely to displace Highland (Penncross creeping bent, and Kingstown velvet bent are two likely candidates), but finds that nothing on the scene gives quite so good a winter performance as Highland, and is so economical and in dependable supply. Other bentgrass cultivars may have individual attributes better than Highland, but Shildrick winds up his summary as follows:

"---for golf greens and other fine turf where winter appearance is important, the generally used mixture of Highland bent and a Chewings fescue such as Highlight still seems best. For other areas, there are alternatives that might be better, although they still have enough question marks against them to justify caution."

TURFGRASS TOLERANCE TO WEAR

Shearman and Beard, Michigan, report upon turfgrass wear in a series of the items in the March-April Agronomy Journal. Varieties tested were Manhattan ryegrass, Merion bluegrass, Kentucky-31 tall fescue, Pennlawn red fescue, Italian ryegrass, Cascade fescue, and rough bluegrass. Manhattan was the most tolerant of the varieties to wheel wear, followed by tall fescue and Merion; Cascade fescue and rough bluegrass ranked lowest. Manhattan, tall fescue and Merion were all about equally tolerant to sled (drag) type wear, but Merion was the most resistant to injury. Cascade fescue and rough bluegrass were almost destroyed by the crushing action of the sled.

Cell wall constituents of the various cultivars were measured, and it was determined that "total cell wall content"--- accounted for 98% of the variation in wear tolerance among the seven turfgrass species. Cell wall constituents increased as the plant matured, especially from July to September, but declined somewhat during October. Blade portion of the leaf showed significantly less total cell wall content (i.e. was "softer") than the leaf sheath, with all species.

Relating various physiological, morphological and anatomical characteristics to wear, the researchers concluded that only tensile strength of the leaf, and leaf width, contributed appreciably to turfgrass wear tolerance. By way of comparison, sclerenchyma tissues (heavy cell walls) in tall fescue constituted almost 19% of the leaves and over 23% of the stems, while with Poa trivialis (the weakest species against wear) the respective percentages were only about 9% and 10%. Obviously, the better wear resistance of tall fescue depends upon the high percentage of lignified cells (about 50% of the plant), compared to less than half this much with Poa trivialis.

SYSTEMIC FUNGICIDES REVIEWED

Dr. Richard Smiley, Cornell, compares systemic contact fungicides in the May The Golf Superintendent. Some of his observations are rather startling.

Systemics work best as a soil drench, absorbed through the roots. But there is loss of efficiency due to absorbtion on the thatch, drying on the foliage, leaching, etc. Overly acid soils encourage hydrolysis and lack of persistence. When the systemics are used to control foliar diseases, they must be applied just as often as are contact fungicides. But they act as a curative as well as a preventive, and save some expense because you can wait until the disease shows.

Systemics are perhaps most useful in preventing root-infecting diseases such as stripe smut and Fusarium blight. They are not useful for Pythium, Helminthosporium, fairy ring, snowmold, etc. But perhaps newer chemicals selective against these diseases will be developed? All of the present systemics, of which benomyl is best known, hydrolyze within the plant to a chemical form that is fungicidal. Translocation in the plant is upward only (hence foliar applications do not protect roots). Open bags of fungicide may hydrolyze and lose effectiveness.

Systemic fungicides are best drenched into damp soil, followed by watering-in; any material remaining on the foliage or the thatch is probably wasted. Application of systemics during a light steady rain is suggested. Prevention of stripe smut is best undertaken with autumn drenches, Fusarium in late spring just before disease normally builds up. With stripe smut autumn application eradicates the fungus that over-winters in the grass.

Fungi can build up resistance to systemics easily since systemics interfere with metabolism at a single point. Smiley believes that systemics should be used at full strength, infrequently, their applications separated by 2 or 3 contact treatments. It is possible that systemics will become phytotoxic, since their breakdown is relatively slow (about 6 months). They are toxic both to earthworms and nematodes, the latter case usually beneficial. Repeated applications may reduce mites, and with the mite population low predators depending on them may die out, resulting in a rapid buildup of the mites once again until the predators reestablish. This is a problem with foliar applications rather than with drenches.

On the whole the systemics represent a remarkable breakthrough, but their efficiency can vary greatly depending upon adequacy of application. On the whole they are more selective than contact fungicides, and are not effective against many important diseases. Repeated heavy applications can lead to phytotoxicity. And where systemics are relied on entirely, resistant strains of disease stand good chance of developing. Systemics are chiefly useful for diseases that spread through the roots (others being controllable with less expensive contact fungicides).

SEED GERMINATION

The winter 1974 issue of Search (American Seed Research Foundation) appeared in May. Most of the research reported had little to do with grass seed. However wetting-drying treatments with Kentucky bluegrass helped germination somewhat, the best results being obtained when the seed was soaked at low temperature for nearly a week, in aerated potassium nitrate, before drying.

Dormancy of fresh ryegrass seed is a problem, and the Manhattan variety has exhibited the highest dormancy. It is 94% dormant at harvest, although during maturation stages (before harvest) considerably less dormancy is manifest (44% about 27 days after anthesis).

SHADE ADAPTATION

Michigan researchers report in the March-April Crop Science, on comparisons of Merion Kentucky bluegrass and Pennlawn red fescue under reduced light intensities. Both varieties behaved similarly, except that Pennlawn was able to maintain a positive carbon dioxide photosynthetic-respiratory balance at low light intensity while Merion was negative. This may contribute to fescue shade tolerance. Wilkinson and Beard, in the same issue, found that both Merion and Pennlawn had fewer stomata and chloroplasts under reduced light intensity, but that Pennlawn did not show the decrease in cuticle and vascular tissues that Merion did; perhaps thicker cuticle and better vascular support aid fescues in shade adaptation?

YELLOW NUTSEDGE

February's Weeds, Trees and Turf reviewed presentations at the North Central Weed Control Conference, including investigations on yellow nutsedge control by A. J. Turgeon of Illinois. Kentucky bluegrass proved quite competitive to nutsedge. Nutsedge planted alone and unmowed prospered, developing many "tubers", but it was almost completely repressed when interplanted with Kentucky bluegrass and kept mowed. In field planting, low mowing favored the nutsedge (probably because it was restrictive on competing Kentucky bluegrass). Fertilization stimulated nutsedge initially, but was detrimental in the long term, again because it probably made the Kentucky bluegrass more competitive. In short, any treatment that favored the bluegrass inhibited the nutsedge. Chemical treatments with bentazon, cyperquat and MAMA were all successful, but generally needed two treatments. Irrigation, to keep the nutsedge flourishing prior to treatment, made the herbicides more effective. MAMA caused slight discoloration to grass, while there was no injury from the other two chemicals.

TEMPERATURE AFFECTS GRASS APPEARANCE

Studies by Duff and Beard, made in Michigan (reported in Physiologia Plantarum, publication of the Scandinavian Society for Plant Physiology) indicate that creeping bentgrass grown in a temperature range from 86-104 F has a distinctly different character and appearance than if grown at cooler temperatures (50-68 F). At the higher temperature leaves were much broader and bristle-like. In a supplementary study, the leaves of plants grown at the higher temperature regime contained about 50% more water-soluble carbohydrate than those grown at lower temperatures. Oxygen evolution increased as temperature increased, and was in the neighborhood of 10 times that of carbon dioxide.

HARDIER BERMUDAGRASS

Research at Oklahoma State University has uncovered a strain of open-pollinated bermudagrass showing greater winter hardiness and earlier spring green-up than the usual "common" from seed grown in the Yuma, Arizona producing region. A report on this appears in the March-April issue of the Agronomy Journal.

SEED GERMINATION IS INHIBITED

Ahring et al, Oklahoma, report on research in the May-June Agronomy Journal, in which repressants for germination (in two species of bluestem) were found in the seed hulls. This has never been fully substantiated for lawngrasses. Heating brought about degradation of the inhibitors.

CONTROLLED-RELEASE FERTILIZER PERFORMANCE

Volk and Horn, Florida, discuss extensive experimentation on five southern turfgrasses and on overseeded ryegrass, in the March-April issue of the Agronomy Journal. Sulphur coated urea, IBDU, activated sewage sludge, and UF were all compared, with a standard consisting of weekly applications of ammonium nitrate. The sulphur coated urea worked very well for summer fertilization, but tended to "move" in the sod providing an irregular response pattern. IBDU experienced a lag before full effectiveness was felt, but performed well, and rated best for turf stimulation in cold weather. Sewage sludge and UF were very similar, except that UF had a greater residual influence (but not so much as IBDU). IBDU availability is not so dependent upon temperature as is availability from the other sources, and its solubility varies appreciably with pH. The authors judge that all four of the slow-release materials have considerable merit. The research was quite extensive, involving four different convincing experiments.

MICHIGAN REPORTS

The Institute received a copy of the 1974 Northern Michigan Turfgrass Field Day, Traverse City, September 10. 1974 was an "unusual" year, the first time in a decade that leafspot was of consequence in spring, followed by summer drought stress. Wetting agents showed advantage for irrigating sandy soils that had become hydrophobic. On the sandy soils of northern Michigan "gradual-release" fertilizer is especially important, best ratings generally coming from generous applications both spring and autumn. Variety evaluations in northern Michigan are frequently different than farther south: among fine fescues Menuet was far superior (five year average), with most of the familiar commercial names far down the list. Among commercial bluegrasses A-20 and A-34 rated close to the top, followed closely by Galaxy, Sydsport, Baron, Fylking and a number of the Rutgers hybrids; Sodco, Nugget and Pennstar were intermediate; common types lowest rating. Individual varieties exhibited considerable difference in wear tolerance, with A-34 being considerably ahead (followed by Merion, Baron, Nugget); Park and Sydsport were poorest of those tested. Some of the familiar growth regulators restrain bluegrass growth well, but timing of their application is critical (even a week's difference resulting in failure); this makes practical use by the non-professional questionable.

ENVIRONMENTAL EFFECTS ON PLANTS

A couple of "trivia" items in the April-May Crops and Soils magazine may hold interest for their implications on lawn performance.

Present concern with supersonic airplane flights (they may disrupt the ozone layer letting more ultraviolet light reach growing plants), stimulated USDA research in which some plants (such as peanuts, peppers, lettuce) were, indeed, repressed by increased UV incidence, but other crops (including several grains and bermudagrass) were not.

USDA scientists also determined that about 6 1/2 pounds of nitrogen is supplied to each acre of land through rainfall in climates where precipitation is about 36 inches annually. At the same time runoff from a watershed planted to corn contained less than 1 pound nitrogen per acre. It was estimated two thirds of this runoff nitrogen could be accounted for from that contained in the rainfall, the other third coming from the soil (fertilized at "normal" rates for corn).

Presumably the same factors would apply to lawngrasses under similar environmental conditions.

WEED CONTROL IN BERMUDAGRASS

B. J. Johnson reports in the March issue of Weed Science, on controlling winter weeds (principally Poa annua) in bermuda turf. A number of pre-emergence and other chemicals were used, applied through summer into October. In most cases applications early in the year were not effective as those made later, October working out best in the majority of cases. Pronamide, newly suggested for control of Poa annua and other cool-season grasses in bermuda, was in general no more effective than conventional pre-emergents (DCPA, bensulide, terbutol, benefin) or simazine.

RECENT "GRÄS-tips" RECEIVED

Weibuls's always excellent turfgrass publication "Gräs-tips" was received in March. As usual the articles are in Swedish, but an English summary is provided. Articles on this occasion included successful use of salt water (from the Baltic) for irrigating turfgrass, matching athletic field use to the season, considerations of soil quality (a position is taken that weed seed and live fragments as of quackgrass are an important consideration in soil analysis), a case history of temporary turf damage by birds seeking insect larvae, and an overview showing that frit flies remain an important pest for Swedish and North European golf courses.

DISTINGUISHING BLUEGRASS CULTIVARS

Nittler and Kenny, Cornell, discuss identification of Kentucky bluegrass cultivars by means of nitrogen-deficient culturing, in the May-June Agronomy Journal. When seedlings are grown under nitrogen deficiency some cultivars remain green, other turn light red, and some have intermediate characteristics. Victa, Baron, Troy, Prato and P-133 are strongly red, almost never green; A-34, Cougar, Glade, and Nugget are strongly to moderately red, almost never green. At the other extreme Newport is almost invariably green: Windsor, Merion, and P-59 strongly so (but with some tendency to a slight reddish tint). The authors feel that the scheme is sufficient to distinguish between extreme types, but, of course, not intermediate or variable cultivars.