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

At the annual meeting, held at the Del Coronado Hotel, San Diego, June 24, 1980, Lawn Institute members elected Trustees and a new slate of officers for the 1980-81 fiscal year. There being no additional nominations from the floor, slates presented by the Nominating Committee (Jim Carnes, Chairman; Dick Bailey; E. R. Townsend) were elected by unanimous ballot. As the by-laws require, six trustees are elected by the Board of Directors, and the remaining members appointed by the Executive Committee of the Board of Directors subject to concurrence of the membership.

Norman Rothwell, N. M. Rothwell Seeds, P. O. Box 511, Lindsay, Ontario, Canada, becomes the new President of the Institute for the 1980-81 fiscal year. He is ably supported by Bob Peterson, E. F. Burlingham & Sons, Forest Grove, Oregon as Vice President. Robert Russell, J. & L. Adikes, Inc., Jamaica, N. Y., was re-elected Secretary-Treasurer. President Rothwell appointed Messrs. Carnes, Jacklin and Schuler to the Executive Committee, who, along with the officers, constitute that decision-making group.

Trustees assuming office for the fiscal year are:

Dick Bailey, Merion Bluegrass Association
Bob Buker, F. F. R.
Jim Carnes, International Seeds, Inc.
Hal Dickey, North American Plant Breeders
Gabe Eros, OSECO, Inc.
Jay Glatt, Turf Seeds
Doyle Jacklin, Vaughar-Jacklin
James Jenks, Jenks-White Seed Co.
Ben Klugman, Twin City Seed Co.
Peter Loft, Loft's Pedigreed Seed Co.
Ed Mangelsdorf, Mangelsdorf Seed Co.
Bob Peterson, E. F. Burlingham & Sons
Norm Rothwell, N. M. Rothwell Seeds, Inc.
Bob Russell, J. & L. Adikes, Inc.
Howard Schuler, Northrup-King & Co.
John Southernland, Stanford Seed Co.
Denny Taylor, Highland Bentgrass Commission
E. R. Townsend, Whitney-Dickinson Seed Co.
Bob Wetsel, Wetsel Seed Co.
Kent Wiley, Pickseed West, Inc.
John Zajac, Garfield/Williamson

SUMMARY OF ANNUAL MEETING, SAN DIEGO, JUNE 24, 1980

President Jacklin called the meeting to order shortly after 1:00 P.M., in the Manchester Room of the Hotel del Coronado, San Diego. The Secretary-Treasurer gave a brief resume of the previous annual meeting, and passed out a financial report showing status of the Institute. The minutes were approved as circulated (to the membership generally, in Harvests). Mr. Russell expressed satisfaction that the overall financial status of the Institute showed slightly increased assets, attributable mainly to higher interest rates and economical operation at the staff office, in spite of some decline in proprietary revenues because of the lean crop year. The full audit and financial reports are on file as part of the record.

President Jacklin called upon Director Schery for his annual report for the year. This is included as a separate item beginning on page 5. Dr. Pepin was called upon to review highlights of the Variety Review Board for the year. Dr. Pepin's summarization is presented beginning on page 4.

Mr. Jacklin then asked Hal Dickey to discuss activities of the Product Review Board. Mr. Dickey indicated that not a whole lot of progress could be reported, although extensive contacts had been made with such firms as the Celpril Corporation, McDonough (Snapper mowers), and PBI/Gordon. A good bit of interest had been engendered, but in most cases intermediate level recommendations were tabled by higher executives for the time being. Mr. Dickey has hopes that his efforts will still bear fruit. Considerable discussion from the floor followed, concerning possible other product avenues, particularly in the sulfur coated urea fertilizer sphere.

Mr. Peterson, for the Research Grant Committee, reported that no grants were made during the fiscal year. Mr. Carnes, for the Nominating Committee, then presented the proposed slates of candidates for Trustee, noted separately in the lead item. There were no nominations from the floor, and the slate was elected unanimously.

Mr. Jacklin asked Director Schery to review the informational program for the South. This seems to have been well accepted, and the membership enthusiastic about its continuance. Mr. Spaulding suggested that there might be considerable interest in winter overseeding in southern California, and Schery suggested that it would probably be worthwhile separating out southern California addresses to receive the "southern press kits" instead of (or in addition to) the regular northern edition.

Mr. Jacklin then opened the meeting to a general discussion and any other business to be brought before the meeting. His address, reviewing the year, is reported separately beginning on page 3.

Mr. Jacklin then closed the general meeting, and convened the new Board. Nominated as officers, and elected unanimously, were: Norman Rothwell, President; Robert Peterson, Vice President; Robert Russell, Secretary-Treasurer. The new President assumed the Chair, and made customary appointments. Messrs. Jim Carnes of International Seeds, Doyle Jacklin of Vaughan-Jacklin, and Howard Schuler of Northrup-King were appointed to the Executive Committee. Mr. Rothwell asked the existing Variety Review Board members to accept another term in office, with Dr. Gerald Pepin Chairman, Messrs. Bailey, Kaerwer and Loft. Robert Peterson will chair the Research Grant Committee, on which Messrs. Glatly and Hurley will also serve. Hal Dickey was asked to continue his fine work as Chairman of the Product Review Board, choosing such other members as may aid in the Board's undertakings.

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SUMMARY OF ANNUAL MEETING, SAN DIEGO, JUNE 24, 1980 - Continued

Dr. Pepin called for formal acceptance of the varieties earlier nominated in his Variety Review Board report. Motion approved. He also advocated acceptance of Norlea perennial ryegrass, with the understanding that this cultivar would be recommended chiefly for its tolerance to cold and not for more southerly locations where denser, more neatly mowing cultivars seem preferable. Considerable discussion followed, and in the short time remaining no clear agreement seemed possible concerning Norlea. Mr. Gabe Eros (Norlea sponsor) accepted Mr. Rothwell's suggestion that the matter be referred to the Executive Committee for more thorough delineation.

The Board approved continuance of participation in the cooperative "Supplement" (The Living Landscape) assuming that costs will not vary appreciably from those encountered this year. The Lawn and Turfgrass Division of ASTA customarily shares in this sponsorship, and so voted in a separate meeting later in the day. President Rothwell will review needs for interim meetings, for either the Board or the Executive Committee; the next annual meeting will be held in conjunction with the ASTA, in Atlanta, in 1981. Without further business to be undertaken, the meeting was adjourned at 3p.

PRESIDENTIAL ADDRESS, ANNUAL MEETING, SAN DIEGO

For the last few years I have had the pleasure of serving as your President. It has been a truly genuine pleasure, primarily because of the people I've worked with - - our good Director, Dr. Robert Schery, who constantly amazes me with his ability to turn what seems to be limited and somewhat repetitive turfgrass information into a myriad of different and interesting articles releases for use by consumer newspaper, magazine, radio, and television media throughout North America. His expert summary of chemical and variety trial information in the Lawn Institute's Harvests publication are worth their weight in gold. If you don't read Harvests in detail two or even three times over, you are missing a lot of good, concise, yet abbreviated information. Bob, I can't thank you enough for your support and good effort!

Secondly, Secretary-Treasurer Bob Russell, who is a stickler for correctly detailed, yet up-to-date financial information, and who so ably designed and implemented the computer variety billing and accounting program, your efforts made it easier for all of us - - I thank you!

Finally, to our Executive Committee: Chase Cornelius, Bob Peterson, Norm Rothwell, and especially Jim Carnes, your time and input effort on behalf of the Institute has given us true stability. My sincere appreciation to all of you.

Pausing for a moment, I truly feel that the Institute has reached a level of relatively calm stability and acknowledged respect from the various media directors, the seed trade, and even the university researchers and professors. We have come into "being" and are accepted as an authoritative entity providing true and accurate information about turfgrass varieties and all the necessary disciplines that go together to produce "good turf." I am sure you all realize what an enviable position that puts us in, as we attempt to do a better job educating and informing the consumer about our many new and better performing varieties and products. The ultimate bottom line of course is the cost return relationship, and in my opinion this is where the Institute glows! For what we all pay into the Institute on the basis of poundage or product assessments, I conservatively estimate that we receive a benefit worth at least four times what direct paid advertising would cost.

PRESIDENTIAL ADDRESS, ANNUAL MEETING, SAN DIEGO - Continued

Looking ahead, our job is never ending. Not only must we keep the "present public" better informed about our varieties and products, we must also direct our information to the "future public," whose needs and desires are always changing. I believe the Institute is in a good, solid position to do just that, but we mustn't become complacent or lazy. We must, through our Director's aggressive endeavors, reach even more media channels with our educational information, and we must also reach new areas of North America where we have been weak in the past. Our new by-laws provide very adequately for new product membership covering developments other than turfgrass varieties, and we must now exploit that lawn product accessibility. The more diverse the product line, the more we have to talk about and relate to as we describe our new variety developments.

Your Institute is in good shape! There are definitely many challenges ahead which our new President, the Executive Committee, and the Board of Directors will face, and I look forward to joining them as they meet them head on. Thank you for the opportunity to serve as your President and I hope that you will give your new incoming President the same support and encouragement that you have given me during these past years.

Doyle W. Jacklin
Retiring President

ANNUAL REPORT OF THE LAWN INSTITUTE VARIETY REVIEW BOARD, SAN DIEGO, JUNE 24, 1980

For the July 1979-June 1980 period four applications were received by the Variety Review Board for acceptance to the Lawn Institute list of approved varieties.

Applications were approved for Rebel turf-type tall fescue and Merit and Vantage Kentucky bluegrass. A provisional application was received and approved by the VRB for America Kentucky bluegrass for the 1980-1981 period. The VRB recommends that the Lawn Institute Executive Committee add these varieties to the approved list.

The current list of approved varieties now includes the following varieties:

<u>Kentucky Bluegrass</u>	<u>Perennial Ryegrass</u>	<u>Fine Fescue</u>	<u>Specialty Varieties</u>
Adelphi	Blazer	Banner	Emerald Creeping bent
** America	Citation	Ensylva	Highland Colonial bent
Arboretum	Derby	Highlight	Prominent Creeping bent
Baron	Diplomat	Koket	Sabre <u>Poa trivialis</u>
Birka	Fiesta	Ruby	* Rebel tall fescue
Bonnieblue	Manhattan		
Fylking	*** Norlea		
Glade	NK200		
Majestic	Omega	* ..	Subject to the approval of the
Merion	Pennfine		Board of Directors
* Merit	Regal		
Nugget	Yorktown II	**	Provisional Acceptance for 1980-81
Plush			
Ram I		***	Referred to Executive Committee
Sydsport			for final qualification
Touchdown			
* Vantage			
Enmundi			

Respectfully submitted, G. W. Pepin, Chairman, VRB
[Board approval voted as presented]

ANNUAL REPORT BY THE DIRECTOR, TO THE BOARD OF TRUSTEES, SAN DIEGO, FOR THE
FISCAL YEAR 1979-80

I am reporting today on our participation in what seems to have become an eight to ten billion dollar business (annual maintenance expenditures) for turf care. This is certainly not a trifling facet of horticulture any longer? Although much of that which I will mention is familiar to those of you who take time to read the quarterly news report, Harvests, this is traditional time of the year for a resume, - a consideration of achievements during the fiscal year, and plans for the year ahead as nearly as we can focus upon them. So that comparison with past reports (always appearing in the mid-year issue of Harvests) is possible, I will follow essentially the same topical sequence as has been customary.

Before getting on with the details, on behalf of the Marysville staff, I do want to thank the membership for its fine cooperation and pleasant working relationships enjoyed during the year; and especially to express appreciation for the dedication of the elected officers. On the whole the system seems functioning well, and we gain excellent "mileage" from efforts that are necessarily restricted in these inflationary times. The "presence" of the Institute seems worthwhile, and your support of it not misplaced. We retain an image of competence and high quality with editors nationally. An old adage suggests that it is better to tell one's own story, lest someone else tell it in a way not to your liking. The Institute continues to put the industry's "best foot forward" in advancing the cause of new lawngrass cultivars and their proper care. Such confidence as is engendered by an independent program, year after year, cannot help but have cumulative influence and redound to the credit of the entire lawn supply industry. As I noted in the opening of a story prepared for the annual turfgrass issue of Seed World:

" - - - The lawn seed industry still has a tremendous, constantly changing, consuming audience to educate about the virtues of the new cultivars. - - - That's where the Lawn Institute fills a need; it acts as independent authority, providing informative literature and lists of cultivars. Due to years of careful cultivation of the gardening press, Institute stories and recommendations have come to be widely accepted, particularly by writers of lawn and garden literature looking for a source of honest information. That's one reason the Institute has been called upon so often to author the lawn section of encyclopedias, such as the 'bible' of the horticultural realm, Hortus III. - - -".

Institute membership has remained steady. Of course backbone for our financing comes from proprietary members who contribute according to poundage of the cultivars recognized by the Variety Review Board. Sixteen proprietary firms maintained membership during the year. Grouped with the proprietary members are such fine associations as the Merion Bluegrass Association and the Highland Bentgrass Commission. Non-proprietary memberships, mainly involving wholesale and retail firms "on the firing line", number about thirty. Included here are a few members only indirectly involved with seed, such as Anderson's (fertilizers), Chesapeake Advertising, and Harvest Publishing (Weeds, Trees and Turf, Lawn Care Industry).

We are especially grateful for the assistance of the Lawn and Turfgrass Division of the American Seed Trade Association, which once again voted to share with us the expenses in preparation of the joint "Supplement" (Lawns, Gardens and Pools, to be renamed in 1980 "The Living Landscape"). And we have been fortunate to enjoy occasional donations, such as that from the Atlantic

ANNUAL REPORT BY THE DIRECTOR - Continued

Seedsmen and Mader Farms. I cannot report any new additions in the Product Review Board category; Hal Dickey of North American Plant Breeders has been active in soliciting interest, and we have made several mailings to prospects that may bear fruit in the future.

We are very much indebted to Dr. Gerald Pepin of International Seeds, who lent his prestige and ability for another year to the chairmanship of the Variety Review Board (other members include Messrs. Richard Bailey, Howard Kaerwer and Peter Loft). You will hear a separate report from Jerry on activities of the Variety Review Board, which during the fiscal year accepted four new cultivars (American, Merit, and Vantage bluegrasses, Rebel tall fescue). The Variety Review Board affords a dynamic reflection of conditions as they exist and change, and I can perhaps best summarize my appreciation of its significance by quoting again from New Lawn Cultivars, An Industry Plus:

" - - - Officers and the Board of the Institute have realized that it, too, needs techniques for furthering appreciation of the new, improved cultivars. One particularly helpful move has been creation of a Variety Review Board (VRB). - - - The Lawn Institute's Variety Review Board operates very smoothly in a semi-formal fashion. Member firms can nominate any new cultivar for possible acceptance by the Board. Certain standards must be met, which require some length of experience, documentation and availability, - - - The Board keeps in mind that it must not be dogmatic, that certain cultivars have limited specialty usages. Several acceptances might seem questionable if one thinks only in terms of brand-new 'dandies' likely to charm the market; rather they may simply be useful workhorses that have proven themselves for a particular region, uses, or for extending more expensive cultivars in short supply - -".

Now to the nitty gritty. Treasurer Russell has given you an excellent overall summary of Institute income and expenditures. A breakdown is provided here of the way we spend these moneys exclusive of basic salary and fringe benefits. You will note that expenditures are conservative, although some inevitably must rise. Our chief expense is for press kits and associated mailings, piece de resistance of the Institute. Not much opportunity for retrenchment exists, for costs of postage, paper, production, supplies and services all continue to rise. The apparent "savings" this year compared to last, noted in Table I, is due to billings for the Lawns Across America leaflet falling in the previous fiscal year. All categories other than "reprints" rose or fell only slightly. Table I breaks down office expenditures into seven categories, comparing this fiscal year with last, and with budgeted expectations. We feel gratified to have held the line well, remaining significantly within budgetary expectations. Some of the gains were fortuitous, and may not be repeatable; - no significant equipment breakdowns and consequent capital expenditures, a "nearby" annual meeting necessitating less travel, and no appreciable grants-in-aid given out.

ANNUAL REPORT BY THE DIRECTOR - Continued

TABLE I. EXPENDITURES, MARYSVILLE OFFICE 1979-80
(Exclusive of salaries and fringe benefits handled by Treasurer)
[in 1,000's]

	<u>Carry-Over Budget</u>	<u>Spent 1979-1980</u>	<u>Spent 1978-1979</u>
1. Press Mailings and Associated Expense	8.2	7.9	8.6
a. Press Kits		[3.5]	[3.6]
b. Supplement		[2.2]	[2.0]
c. Reprints		[1.3]	[2.4]
d. Office Supplies		[0.9]	[0.6]
2. Travel	2.0	1.8	.9
3. Rent & Utilities	2.6	2.9	2.6
4. Dues, Subscriptions, Postage	1.4	1.5	1.3
5. Hourly Help	1.0	0.5	0.4
6. Hospitalization & Other Contributions	0.8	0.8	0.7
7. Misc., Including Capitalizations	<u>2.5</u>	<u>0.5</u>	<u>0.9</u>
TOTAL	18.5	15.9	15.4

PRESS MAILINGS

In discussing press mailings, I can almost repeat last year's summarization verbatim. Three avenues for putting information before editors, garden writers, and horticulturists are taken. First, we produce our own seasonal press kits (spring and autumn), mailed in the now widely-recognized "Green Grass" file folder and envelope with Lawn Institute logo. These go to a select and thoroughly winnowed mailing list totaling in the neighborhood of a thousand addresses. This mailing list is kept updated by Mrs. Scheiderer through whatever channels of information become available, with return-postage guarantee being one effective means for weeding out dead names. It is expensive, but less costly than sending "wasted" mailings. Unit costs for the press kit probably come close to two dollars, even with bulk mailing being used, and could be lowered appreciably only by diluting the quality of our list by bulking with routine addresses.

Recipients are chiefly experienced garden writers who have come to know us and use our materials through the years, and who are talented enough to compose their own columns (therefore these releases are produced as double-spaced editorial copy rather than composed in tight, unchangeable, ready-to-use newspaper column form). Of course all of the stories are reworked until we feel they are well enough expressed to be used verbatim, and we encourage our recipients to feel free to do so if they wish, without credit. On the other hand we recognize that most of these people are professionals in the gardening world, and prefer to put the stamp of their own personality on what they write. During the fiscal year 25 titles on 15 pages with 4 informational reprints included as background appeared in the autumn press kit; 26 titles on 17 pages with 3 reprints in the spring one.

Second, we have cooperated in recent years in the production of the "Supplement", (Lawns, Gardens and Pools), a joint venture with American Association of Nurserymen, The Fertilizer Institute, The National Swimming Pool Institute, and this last spring the National Bark Producers Association, Spa and Tub Association, International Fence Industry Association, and Chain Link Fence Manufacturers Institute. This is a spring-only release, more voluminous than our own kits sent to a less

ANNUAL REPORT BY THE DIRECTOR - Continued

highly selected mailing list of over 3,000 addresses. It is printed in newspaper-column format for ready use by smaller newspapers, weeklies and house organs which do not enjoy the luxury of a garden editor. This is a more costly procedure in toto, the production in recent years being handled by William Pflaum Associates, of Reston, Virginia.

Unit costs of the "Supplement" must run three dollars or so per address mailed. However, cost to us is significantly decreased because of the sharing with the other associations, to one sixth this amount. I don't feel that this dilutes our effectiveness to any significant degree, since the other associations have generally furnished sound copy and illustrations of good quality that complement what we have to say about lawns. As a matter of fact it may draw additional attention to our items to have people scan these pages for information about trees and shrubs, fertilizers, swimming pools, mulches, and other facets of gardening. Also, participation in the "Supplement" provides us opportunity to offer illustrations inexpensively, taken from the Institute photographic pool that we maintain in Marysville.

We participate not only in this major endeavor, but also in other "Supplements" for which our cooperation is requested on a non-fee basis. For example, during the year we provided text for SCW Inc., New York and California; Copley News Service, through the California headquarters; and offered suggestions to Scriptographic Booklets of Massachusetts.

Third, we have within the last two years undertaken a specialized first-class mailing to editors, garden writers and other professionals in the South, both spring and autumn. This, also, is a select list from which dead names are culled and live prospects added continuously. We restrict this mailing to something less than 500 addresses, and have developed materials for it that are mostly different from our northern mailings (we stress winter overseeding with perennial ryegrass, for example). For obvious reasons we haven't as much of a story to tell in the South as we have in the North where most of the seeded grasses are used, so less copy is sent by "prestigious" first class mail in a letterhead envelope. Eleven titles were sent counting both seasonal mailings, and 4 informational reprints included.

That the press distributions enjoy usage is attested to by our running across items in the few papers we happen to sample, and by requests that Pflaum receives for photographs. Especially indicative are the mailings received in Marysville in response to the press offerings of literature upon receipt of a stamped envelope. We are not always certain just what offer is being referred to since we also make similar offers of free literature in "catalogs" and "horticultural trade publications". But it is apparent that editors are utilizing the offers. Clippings and requests come in from all sections of the country, - surprisingly a large number from the South (although our main center of interest remains the Northeast).

MAGAZINE STORIES AND OTHER PUBLICATIONS

The Institute has continued to provide through the writings of its Director, numerous stories for the popular and technical gardening presses. Table II lists those titles which have been published or first reprinted during the fiscal year, along with the magazine in which they appeared. Through the years about 300 lawn stories have been published in magazines nationally,

authored by the Institute's Director. Naturally, we always appreciate being recommended to editors for lawn coverage and various writing assignments.

TABLE II - TITLES THAT WERE PUBLISHED, FIRST REPRINTED
(OR ARE IN PRESS) DURING THE FISCAL YEAR

"Money Saving Ideas"	American Horticulturist
Tips For Autumn Lawn Care	American Horticulturist
Home Lawn Handbook (opening chapters), revised	Brooklyn Botanic Garden
Lawns In Summer	Copley News Service
New Cultivars, A Lawngrass Breakthrough	Copley News Service
Greener Grass on Your Side of the Fence	Country Gentleman
Looking to the Lawn This Autumn	Country Gentleman
Lawn & Turfgrasses	Encyclopedia of Science & Technology
How to Handle Your Lawn in Summer	Flower and Garden
Lawns "Blossom" In Autumn	Flower and Garden
Listing of Cultivars	Garden Writers Assoc.
The Cultivar Revolution	Golf Course Management
Rx for Damaged Turf	Horticulture
Lawns: A Concept Proven	Lawn Care Industry
New Lawngrass Cultivars Available	Lawn Care Industry
Recarpeting Urban America	Lawn Care Industry
Lawns Across America	Lawn Institute
Lawn Mowing Machines	Plants Alive
Lawn Service in the USA	Rasen (Germany)
Has Turfgrass Development Plateaued?	Seed World
New Lawn Cultivars, An Industry Plus	Seed World
No Frill Future May Require Closer Attention To Turf Selection	Weeds, Trees and Turf
Turf Give-and-Take, etc.	Western Landscaping News

Table III, similarly, lists the titles and magazines represented in the reprints included in this year's press kit mailings. We feel this is an excellent way of utilizing past stories, which not only provide background and documentation for the recipients of the press kits, but lengthens the life of a story while publicizing the Institute and the magazine alike. This has proven our most economical way of reaching a key audience for such materials.

TABLE III - PRESS KIT STORY INCLUSIONS, 1979-80 FISCAL YEAR

North

Autumn 1979

- | | |
|---|------------------------|
| 1. Lawngrasses for Fall Planting | Plants Alive |
| 2. Cultivar Performance in Sod
Blends and Mixtures | Weeds, Trees and Turf |
| 3. Lawns: A Concept Proven | Lawn Care Industry |
| 4. The Cultivar Revolution | Golf Course Management |

North

Spring 1980

- | | |
|--|--------------------|
| 1. How to Handle Your Lawn In Summer | Flower & Garden |
| 2. New Lawngrass Cultivars Available | Lawn Care Industry |
| 3. Rx for Damaged Turf | Horticulture |

ANNUAL REPORT BY THE DIRECTOR - Continued

South

Autumn 1979	1. Lawns: A Concept Proven	Lawn Care Industry
	2. Improving on Nature	The Golf Superintendent

South

Spring 1980	1. How to Handle Your Lawn In Summer .	Flower & Garden
	2. Lawns Across America	Lawn Institute

Of course reprints are also much used for answering mail inquiries, and for servicing our offer to send informational leaflets upon receipt of an addressed, stamped envelope. Of course these reprints are also available to members who would like to use them for hand-outs or envelope stuffers, and for give-away on personal appearances by the Director. We find this the most economical means for facilitating routine inquiry about lawns (although, of course, correspondence is also necessary for those special cases often detailed).

As was noted last year, a "plus" with reprints is, that having appeared in a respected magazine, editorial recognition is signified. Thus the reprints carry an aura of authority that self-published items do not. With everyone being snowed under a barrage of mailings these days, no doubt a lot of the reprints are not read. But the very fact that they have been sent, and in continuous progression through the years, builds at least a subconscious acknowledgement of the Institute.

While most Institute stories are written to be popularly understandable, and are devoid of statistical analysis and similar formalities the research journals require, we nonetheless make use of them in the national literature exchange organized through the American Society of Agronomy. This year 8 reprints were sent to 71 recipients at universities and research centers throughout the world, from most of whom we receive occasional reprints in exchange describing research with which that particular individual is involved.

OTHER ACTIVITIES

1. Scientific - The Institute maintains liaison with turfgrass scientists, mostly employed by agronomy or horticultural departments in landgrant universities. Technical papers presented at the annual meeting of the American Society of Agronomy are the focus of this scientific interest, and we try to cover these presentations as well as to participate in the turfgrass tour. At Ft. Collins last year the Institute helped host the ASTA dinner for officers of the Agronomy Society and press members. Follow through continues from the Third International Turfgrass Conference, and I serve as an associate editor for the Proceedings of that conference. The Fourth International Conference will take place in 1981, in Canada.

2. Contacts - International Turfgrass Conferences, Agronomy Society meetings, and participation in similar activities maintain some contact with technical personnel. This is extended by correspondence. Extension personnel in several states receive special press kit mailings, for distribution by urban county agents. From time to time Institute reprints are mailed to professional personnel nationally as part of a reciprocal literature exchange program.

3. Appearances - To the extent possible, personal presentations are made to interested groups where this does not entail inordinate travel or expense. Examples during the year were a seminar at the Cox Arboretum, Dayton, Ohio, and appearance

- Continued

ANNUAL REPORT BY THE DIRECTOR - Continued

on the "Morning Exchange" television program, WEWS, Cleveland. In April I was guest of the Missouri Botanical Garden at a symposium in Panama winding up the Flora of Panama.

4. Books and Reviews - Books provide an impressive foundation upon which to build. Lawn Keeping is particularly useful as something to recommend where a more complete review is needed than proves possible with reprints and through correspondence. During the fiscal year I also provided the lawn section for revision of Doubleday's 10,000 Garden Questions Answered. Text revision for Plant Science was completed. Sunset and House and Garden magazines have utilized our counsel. Turgeon's new book, Turfgrass Management, is being reviewed for HortScience upon request of editor Jenick.

5. Harvests - The quarterly newsletter, Harvests, not only details Institute activities, but epitomizes research reports that appear in technical journals. This affords a handy way for members to keep on top of developments, and also pulls together diverse information useful for the Institute's educational programs.

6. Photographic Library - An attempt is made to keep up the photographic library, and to maintain a selection of colored slides concerning turfgrass. Illustrations are needed for stories, for personal presentations, and as part of the record. When of benefit to the Institute, photos are offered to newspapers and columnists.

7. Technical Library - A modest technical library of journals and books is also maintained, but this is becoming more difficult to handle, mainly because we lack space, time and manpower to assemble and oversee any sizeable collection of literature.

8. Seed Samples - Seed of most Variety Review Board cultivars is on hand at the staff office, for use on the grounds, and for distribution as samples. This, too, suffers for lack of first-rate storage facilities.

9. Leaflets - During the fiscal year an Institute leaflet developed from a basic review done for the American Association of Nurserymen (Ground Covers for North America) was made available and distributed widely. This leaflet, Lawns Across America, has been offered to the membership at cost, and a few members have utilized it in their promotional programs.

10. Demonstration Plantings - Plantings of Variety Review Board and other cultivars are maintained. These afford first-hand experience for discussing "varieties", and lend authenticity to the Institute. We are pleased that Toro donated an irrigation system during the fiscal year.

11. Special Actions - Effort has been made to counteract the "natural lawn" movement, which has superficial popular appeal because it is presumed that somehow a "natural lawn" is less demanding on resources, time, and trouble than the conventional lawn. Under most conditions this is definitely not the case, the Institute continues to make the reasons quite clear in publications such as "Lawns: A Concept Proven" and their wide dispersal.

12. Cooperative Publicity - We cooperate with other organizations and firms in furtherance of lawn publicity. One example is editorial review of Chronical Guidance "Occupational Briefs" having to do with landscaping and grounds care. The Chicago Sun Times uses the Institute to answer lawn-related inquiries received from its "Action Time" program. This year reserve

copies of the Householder's Guide to Outdoor Beauty were given Mr. Frank Plovick, Anderson, Indiana, at cost of shipping, for a series of garden symposiums under the auspices of the Men's Garden Clubs of America.

13. Correspondence - A moderate but constant flow of correspondence, much of it inquiries, is handled by the staff office. Telephone counseling is also fairly frequent. Goodwill correspondence is maintained with foreign countries (Japan, Australia, Europe and Latin America) and literature has been provided.

14. Administrative - General administrative matters are handled routinely at the Marysville office, although we are very much indebted to Treasurer Russell and his chief accountant, Walter Parker, for taking care of worrisome details such as figuring tax withholdings. An ongoing summary of administrative activities is, of course, reported quarterly in the Harvests.

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I hope I haven't thrown too much detail at you this afternoon. It will, of course, appear in the forthcoming Harvests, for the record. And again, speaking for the staff, we do appreciate your support, and the pleasant working relationships so much enjoyed within the Lawn Institute.

Respectfully,

Robert W. Schery
Diana Scheiderer

SPAULDING SPEAKS TO TURFGRASS DIVISION

The afternoon of June 24, at the San Diego convention, Stan Spaulding, University of California, Santa Ana, was featured speaker before the Lawn and Turfgrass Division of the American Seed Trade Association. Mr. Spaulding's thoughts have been reported in Harvests from time to time, as a result of articles in Southern California Turfgrass Culture, and following visits by Dr. Schery to the Santa Ana proving grounds.

Spaulding made interesting comparisons of cultivars, and was enthusiastic both about newer releases and the use of frequent seeding (such as winter-seeding). The climate of southern California may be a bit extreme for northern grasses, but aside from the interior valleys the virtues of cool-season grasses exceed liabilities.

Spaulding reinforces convictions increasingly heard, that inclusion of a second species (typically perennial ryegrass) in a mixture (typically a bluegrass blend) reduces disease. He also commented upon the greater density (therefore probably increased total photosynthetic surface) of turf mowed low rather than high, and would seem to advocate this. Of course stimulated tillering from low mowing has long been recognized, but is usually accompanied by shorter roots, more weeds, etc. that weakens the stand.

STORY PREPARED

"Lawns 'Blossom' In Autumn" was the tentative title of a story prepared for Flower and Garden Magazine, for a probable appearance in the August issue. It was designed to emphasize the season, - how autumn has many advantages for seeding a new lawn. Institute cultivars were listed in a box, and the fundamentals of planting a lawn briefly covered.

STORIES IN SEED WORLD

The Institute story "New Lawn Cultivars - - - An Industry Plus" was featured in the April Seed World magazine. It reviewed particularly the functioning of the Lawn Institute's Variety Review Board. Also carried in that issue of the magazine were two other items from the spring press kit, "Lawn Service Surgeons" and "Lawn Herbicide Ban Not A Disaster". We were pleased to see all of the attention focused upon lawnseed in this the "Grass Seed Issue" of Seed World.

VARIETY REVIEW BOARD LISTING FOR GARDEN WRITERS

A listing of current Variety Review Board selections, with brief characterizations, was sent Robert Sanders, Executive Director of the Garden Writers Association of America, for possible inclusion as "news" in a forthcoming Bulletin. Mr. Sanders, in a note to the membership, had requested newsworthy information items.

SEASONAL PRESS KIT UNDER WAY

The Institute's autumn press kit is in production, scheduled for mailing in early July. The emphasis is on fundamentals of lawn planting and care in autumn, with accent on the new cultivars. Size is about the same as in the past, 16 pages plus covering letter, with two background leaflets ("Lawns Across America", "Tips on Autumn Lawn Care"). Twenty one individual titles are included, ranging from three pages in length to short paragraphs.

STORY FOR COUNTRY GENTLEMAN MAGAZINE

At the invitation of editor Kinnaird, Country Gentleman magazine, an article tentatively titled "Looking To The Lawn This Autumn" was prepared in late May as a sequel to City Lawns For Country Cousins". This is expected to appear towards the end of summer. It discusses the seasonal appropriateness of lawn tending, mentions some of the newer cultivars becoming available, emphasizes lawn fertilization at this season, and reviews appropriateness of lawn weeding at this time of year.

DR. SCHERY GUEST IN PANAMA

We were pleased that Institute Director Schery was invited by the Missouri Botanical Garden to attend a symposium in Panama the week of April 13-18. Dr. Marshal R. Crosby, Director of Research, writes, "We were certainly honored that you were able to attend the symposium in Panama, and your presence there certainly added to the stature of the event".

VRB LISTING FOR TURF MANAGEMENT HANDBOOK

Dr. Howard B. Sprague telephoned from Washington, wanting a list of current cultivars for mention in the next revision upcoming of his Turf Management Handbook. A listing of Variety Review Board selections was immediately furnished Dr. Sprague, and some suggestions were offered concerning future trends.

INDUSTRY HISTORY SHAPES UP

Bruce Shank, editor of Weeds, Trees and Turf, in a lengthy telephone call to the Institute reviewed plans for a series he is preparing on the lawn and turfgrass industry, the midsummer issue to have an historical bent. We are pleased to be able to provide the editor Shanks with some insights about the early commercial development that has resulted in today's massive availability of new cultivars, and to send him some background literature and a few vignettes about personalities who have shaped the trends.

AN ASSIST ON THE VALUE OF LAWNS

The spring 1980 issue of Green World (New Jersey Turfgrass Association) carries Ralph Engel's article, "Natural Growth Instead of a Good Lawn?". The article is headed by a picture showing a field that has been left unmowed, with the assortment of unwanted vegetation therein. The caption reads, in part, "A fire-prone growth is the next step with its concomitant weeds, trees, honeysuckle, and ivy". Engel continues under the heading "Why Turf is Needed", citing the esthetic value of turf, its value for soil development, recreational values, usefulness for maintaining an acceptable environment about the house (unwanted pests), air refreshment, fire retardation, and so on. Here is something else to cite when so-called "natural lawns" are advocated.

PERENNIAL RYEGRASS TAKEN TO TASK

Dr. John Hall, Virginia, is not very complimentary about perennial ryegrasses for turf in his story in the May issue of Lawn Care Industry. He indicates that, "The perennial ryegrasses should be used primarily as a support or specialty grass - - - with the realization that they will require a fungicide program and may require annual reseeding to thicken the turf."

Hall's conclusions differ from our experience on the Lawn Institute grounds in Ohio. We agree about the excellent establishment rate, but not about summer heat and drought tolerance (the new perennial ryegrasses have been equal to anything else on the Institute grounds). Nor have we found them particularly susceptible to disease, and the newer cultivars mow nicely (he considers them to be "poor" in mowing quality).

It is our experience in Ohio that the better ryegrasses are most of the time just as good-looking as is bluegrass, equally durable, although not as "resilient" and as of good color in winter as is bluegrass. Maybe farther South the perennial ryegrasses prove less tolerant? But certainly in central Ohio they would seem to merit classification as something better than "support or specialty grass".

INSTITUTE QUOTED

We are pleased that E. Dexter Davis, horticulturist author of Greener Gardening, Easier, monthly publication out of Holliston, MA., quotes the Institute at length in volume 7, no. 2. Variety Review Board listings are given, and the Institute is quoted to the effect, "Dr. Robert W. Schery, Director of the Lawn Institute, suggests that new kinds of the perennial ryegrasses look just as handsome as Kentucky bluegrasses, and they contribute quicker coverage of the soil." Davis devotes three-fourths of this issue to lawns, and we are grateful for his recognition of the Institute.

RADIO-TV USE OF PRESS KIT MATERIAL

We are always pleased to have confirmation that press kits sent to radio and TV stations are not being "wasted", although they constitute only a minor portion of our seasonal mailing. Michael Casale, of WLVL, Lockport, N. Y., kindly telephoned to say that much of our spring kit was being utilized on his "Daybreak" program this spring, over WLVL. He wanted to be certain to be kept on the mailing list for future kits, being most pleased with the applicability of the materials.

"INFORMATION EXCHANGE" INVITES INSTITUTE

A mailing from the Heritage Conservation and Recreation Service, United States Department of Interior, opens: "The HCRS Information Exchange has identified your organization as an excellent technical source for recreation practitioners." It goes on to inquire if the Institute has materials which might be offered in their "notification" mailings, to all sections of the country. We were pleased to offer reprints concerning lawns and grass cultivars, for a stamped envelope; recommended the book, Lawn Keeping at cost for more extensive discussions; and suggested the possibility of utilizing "Lawns Across America" with a cultivar reprint upon special request and a stamped envelope.

MORE MAJOR FIELDS SWITCHED TO GRASS

Western Landscaping News, in its February issue, noted that Tifgreen bermudagrass is being installed as a natural playing surface at the Anaheim Stadium (California Angels, Los Angeles Rams, California Surf), with expectation that there will be fewer injuries and better player satisfaction from playing on natural rather than artificial turf. Also planned is the sodding of the San Diego Stadium with Santa Ana bermudagrass.

IMPORTANCE OF LAWNS IN CALIFORNIA

Vic Gibeault, in the "Fall, 1979" California Turfgrass Culture (published in mid-1980) discusses "The Importance of Turfgrass in California". California experts, extrapolating from surveys in other states, believe that there are nearly 1.4 million acres of kept turf in the state, with a maintenance cost totalling nearly 0.7 billion dollars annually. The major portion of this is accounted for by residential lawns (64%, or about 861,000 acres), the maintenance of which runs to nearly 468 million dollars annually. These are just the material things; Gibeault emphasizes the esthetic and "spiritual" values, which are, of course, incalculable.

A NEW BOOK UNDERWAY

Dr. John Falk, currently with the Chesapeake Bay Center for Environmental Studies (Smithsonian Institute), telephoned the Institute seeking a birds-eye view of the magnitude of the lawn and lawn products market. Dr. Falk may be remembered as the author of ecologically-slanted articles depicting such things as energy flow in lawn tending operations. He is gathering information for a new book now in manuscript, which will deal with the impact of lawns and their care on the modus operandi of modern society. Apparently the book will not consider cultural recommendations having to do with lawn making.

VALUE OF A LAWN

The March Outdoor Power Equipment magazine mentions that author Augusta Golding made a survey which indicated that a well-tended lawn adds a minimum of 6% to the value of any house.

TECHNICAL SECTION

MISSOURI LAWN AND TURF CONFERENCE

The Proceedings of the 1979 Missouri Lawn and Turf Conference held in Nov. 1979 were published in May. As has been typical of recent conferences, Dr. Dunn has done a fine job of editing and issuing the Proceedings. Many of the presentations covered the "leading edge" of turfgrass research rather than just parroting "how to" information, including Dr. Pepin's presentation on "Promising Kentucky Bluegrass and Perennial Ryegrass Varieties for the 1980's". We'll not try to review all of the presentations, but report upon some that have incisive interest.

Early presentations were of a general nature, discussing maintenance practices. Richard Smiley, Cornell, espouses many unorthodox ideas. In a general paper he characterized diseases as infectious and non-infectious, and viewed disease "control" as signifying keeping disease at an acceptable level rather than trying for its elimination. To achieve control he would utilize the best genetic quality turfgrass breeders could provide, given the soundest possible management, with pesticide applications only for reinforcement. He feels that even disease-resistant cultivars succumb if environmental conditions turn unfavorable. But so many factors influence the "environment" that it becomes difficult to pinpoint what is "correct" management!

Sherman, Nebraska, follows much the same line of reasoning for weed control. He considers "sound cultural practices" to be the best approach for maintaining weed-free turf. But again it is not always easy to determine what is "sound cultural practice".

Smiley invokes a wide range of observations and theories in his discussion of "Fusarium Blight of Kentucky Bluegrass". He doesn't attribute the "disease" necessarily to the *Fusarium* fungus (never has a pathologist been able to infect healthy grass with the disease), but rather feels that any Kentucky bluegrass can come down with "Fusarium blight" if stresses that affect its growth mount sufficiently. Some of his views are directly the opposite to those generally accepted.

Intriguing theory is offered concerning interaction of various growth hormones, which in turn are affected by the growing conditions and locus in the plant. The interactions are rather speculative, but Smiley surmises that if hormonal balance in tissues is severely altered then "stressful conditions could trigger synchronous death of the entire plant". He points out that excessive solar radiation, heat, water-logging, and so on induce strains known as "physiological drought", with hormonal consequences that can lead to various plant reactions that are often phytotoxic. He notes that the "Fusarium blight" seems more evident under intense and prolonged sunlight, possibly due to elevation of tissue temperatures within the grass (if other normal "cooling physiology" is not operative). Extremely high leaf temperatures have been noted in patches of bluegrass suffering "Fusarium blight". He does not think that lack of moisture is very consequential, but oxygen deficiency may be. He notes that in some cases "Fusarium blight" occurs after excessive watering, although the disease is generally considered to be associated with water deficiency.

Turfgrass stands of low quality are less affected by "Fusarium blight" than high quality stands. Could this be because well-cared for turf generally is better watered, etc.? Anaerobiosis may also play a part? And "Fusarium blight" was most severe in his tests where thatch decomposed most rapidly; were toxic substances released? He has noted ethylene accumulation at high levels under warm-flooded conditions.

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Smiley, noting the research of others, comments that certain cultivars seem to resist "Fusarium blight" rather well in spite of stressful conditions. He names, among others, Adelphi, Baron, Birka, Bonnieblue, Enmundi, Glade, Majestic, Merion, Sydsport and especially Touchdown. But even some of these cultivars did poorly under high fertility and low mowing. Fylking and Nugget were said to be inherently susceptible. Smiley does not have much confidence in blends being more resistant than single cultivars. However, introduction of perennial ryegrass into bluegrass, and even bentgrass into bluegrass, has ended Fusarium blight (for unknown reasons). Introduction of different cultivars, however, may predispose the turf to a different spectrum of disease!

Best fungicidal control of Fusarium has come with the benzimidazole type of systemic fungicide. Smiley speculates that perhaps this is because of hormonal activity (they behave as cytokinin hormones), and can stimulate the absorption of water and minerals, reversing the effects of "physiological drought", etc. Benomyl has been the most effective of the commercial systemics, but newer experimentals show promise (triadimefon, fenarimol, etc.). Some seem superior to benomyl, and provide long-term protection. Yet these same "fungicides" do little to repress Fusarium under culture, another indication of their hormonal rather than fungitoxic influence. Chemically they are related to growth-regulating compounds such as ancymidol. Such sterol-inhibiting chemicals seem to increase phytosynthetic efficiency, and their influence can be reversed with gibberellin. In some instances benzimidazole fungicides have lost influence, attributed to build-up of tolerance by Fusarium; however, on closer examination this tolerance seems linked to other causes of stress (such as herbicide application), which when eliminated ended the tolerance.

Thus Smiley concludes that the best control for "Fusarium blight" is to avoid stresses on the grass. He would avoid fertilization in late spring and summer where Fusarium blight is a problem. He would avoid herbicides that seem to promote disease, such as some which are meant for selective control of Poa annua in Kentucky bluegrass. He sees no point in trying to control inoculum (as leaf clippings). Compacted soil, thatch, liming, etc., may or may not have an influence. The incidence of other diseases, including leafspot, may have some influence, and Smiley believes that many times grass demise blamed on "Fusarium blight" is actually caused by other fungi. He is a believer in competitive ecology among the various fungi, and regards Fusarium (as well as other genera) as ecologically useful (not only in competition, but for decay of organic residues, etc.). It is even possible that some Fusarium infection builds resistance in the bluegrass plant to various stresses, as might a "vaccination". Smiley sees no connection between nematodes and Fusarium blight, other than that occasionally the nematode may act as an incidental carrier or stress factor.

Several papers were involved with fertilization, and emphasized both balance and the importance of seasonal considerations. Dunn regards late summer-autumn fertilization with favor for Missouri. Lawn care operations admittedly can not pinpoint fertilization as exactly as would be desirable, because of the necessity to keep equipment active servicing a large number of customers at all times. Bill Latta, of Princeton Turf, feels that the customary rates recommended for old-fashioned bluegrass do not suffice for newer cultivars.

Dr. Pepin discussed the behavior of cultivars, and the prospects for the future, at some length. He noted that among presently available cultivars that perform well in stressful summer climates are Adelphi, Vantage and Bristol Kentucky bluegrasses; Derby, Pennfine, Regal, Citation and Fiesta perennial ryegrasses.

Many of the remaining presentations dealt with golf course management. Schwartzkopf provided a balanced summarization of topdressing golf greens with sand.

Mehnert, Germany, found that on the Olympic sportsfields of Munich that timothy was aggressive but held up poorly under traffic. Nor did crested dogtail hold up to wear. Perennial ryegrass has been substituted for these species in the recommendations, and some cultivars of Kentucky bluegrass behave well, too (e.g. Sydsport).

Shildrick, United Kingdom, discusses seed mixtures used in his country. Perennial ryegrass is a mainstay for seeding sportsfields receiving intense wear. Fine fescue and Highland Colonial bentgrass are helpful when included as part of the mixture. In a 1975 trial, both timothy and Kentucky bluegrass provided considerable value, as has been reported in the Netherlands. Shildrick considers annual bluegrass to wear very well; perennial ryegrass, timothy and Kentucky bluegrass to be "good"; Colonial bentgrass and red fescue to be "moderate"; crested dogtail and rough bluegrass to be "poor".

Hawes, Maryland, reports on mixtures of warm and cool season grasses in transition zone climate. Summer fertilization caused bermudagrass to squeeze out cool season species (and during the test the bermudagrass was completely killed by the severe winter of 1976-77). However, winter fertilization encouraged Kentucky bluegrass to hold its own against bermudagrass. A sand topdressing reduced spring dead spot disease on bermudagrass. The slowest combination of grasses to recover in spring were zoysia-Kentucky bluegrass, the fastest those containing creeping bentgrass. Hawes suggest a combination of bermudagrass-creeping bentgrass for high quality turf at low mowing heights, and a combination of the Kentucky bluegrass-zoysia for good winter hardiness and persistence under low maintenance.

Adams and Bryan, United Kingdom, investigated variations in annual bluegrass in their country. Considerable diversity was found, related to survival under the differing types of use. The authors conclude that since annual bluegrass becomes a dominant turfgrass in Britain, whether planted or not, it deserves much closer scrutiny for types that would be useful.

Hall, then of Maryland, discusses tall fescue-bluegrass sod, as is much used in the transition zone. Sod growers sow about 90% Kentucky-31 tall fescue with 10% common Kentucky bluegrass (improved cultivars are said to be "too aggressive", causing clumping). Mowing height had little influence on sod strength or transplant rooting. Fertilization close to harvest increased rooting strength, and autumn application of fertilizer significantly reduced crabgrass invasion. Late summer and early spring seeding favored the tall fescue, autumn seeding the bluegrass.

Engel and Trout examined competition among seedlings of various grasses. Red fescue was more competitive than either Colonial bentgrass or Kentucky bluegrass. Ryegrass competition (both perennial and annual) severely suppressed other species. The higher the seeding rate, the more severe the competition. Redtop was not nearly so severe a competitor as ryegrass (when sown on an equal seed count basis). Competition from other grass severely depressed Kentucky bluegrass, perhaps the "weakest" of any of the species in seedling stages. Perennial ryegrass delayed Kentucky bluegrass dominance in mixtures of the two until the fourth growing season. The authors conclude, "The study shows the futility of high rates of seeding for the attempted purpose of better establishment."

Panella, Italy reports that turfgrass research is not very far along in his country. For the most part the same cool-season species doing well in the United States and

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Europe do well in Italy. However, Merion seed from Europe did not perform nearly so well as Merion bluegrass seed from the United States. Local ecotypes of annual ryegrass were better than introduced ones, but introduced tall fescue did as well as native tall fescues.

O'hara, Japan, finds that most of the American cultivars do well on Hokkaido, a cooler portion of Japan. He reports that Astoria Colonial bentgrass gives poor putting quality, but that Highland is liked for tees.

ARIZONA TURFGRASS CONFERENCE

The Proceedings for the 1980 Arizona Turfgrass Conference, held May 8-9, was issued in remarkably fast time, by the beginning of June. Because of the specialized Arizona climate, not all presentations will be of interest to members in general, but we will review the Proceedings briefly.

Opening presentations dealt with efficient use of equipment, and fertilization through irrigation. Kurtz, of California, spoke at length about colorants. These, of course, offer an alternative to overseeding with cool-season grasses. He lists thirteen different colorants being offered, by eight different manufacturers. Among them are a number of shades and strengths. Products cost from as little as \$11 per gallon to as much as \$23 (but the effectiveness, and the rate of dilution, determine value). The report did not deal with durability beyond a few weeks, but highest ratings within that span fell to several 7-K Color Corporation (Hollywood, California) products and to Greenzit (Cleary, N. J.). A couple of products contained particles or gels which clog spray apparatus. Total costs range from \$130 to \$400 per acre (but would be proportionately more for smaller properties requiring "on-off" spraying). Most spray materials left coloring on clothing, one of which was very difficult to remove.

The advantages and disadvantages of sodding vs. plugging vs. stolonizing vs. seeding were compared. Seeding is, of course, considerably the least costly method of planting bermudagrass. Horst, El Paso, analyzed bluegrass usage in the South, feeling that many transposed northerners demand it. He finds that both tall fescues and Kentucky bluegrass survive in the El Paso area, but that summers are too hot for perennial ryegrass. Growth habits of different cultivars are analyzed in terms of "energy reserves" and "duration of regrowth." Adelphi maintained high regrowth reserves compared to Delta until September. Horst concludes that possibly both Adelphi and Bonnieblue have undergone adaptation to higher environmental temperatures. Heat resistance and disease resistance don't necessarily coincide, but do often occur in the same cultivar. Common bluegrasses seem to grow well in cool weather, then turn dormant; yet certain selected cultivars exhibit no great difference in growth comparing cool to warm season. Horst feels that selections for the area must endure salinity (commonplace in soil and irrigation water); Nugget and Park showed very good relative salinity resistance, with Baron, Fylking, and Birka only a bit less.

No good control for pearl scale has yet been achieved. Golf course problems are many, with internal drainage of the green perhaps the leading one. The basic behavior of nitrogen, phosphorus and sulfur are discussed by faculty members of the University of Arizona. In most cases nutrients are adequate in western soils, but are not necessarily readily available at the prevailing pH. In most cases sulfur additions are beneficial. Kneebone notes that search is on for cultivars surviving well without additional phosphorus, because this will give them a competitive advantage over Poa annua (unfortunately Poa trivialis is not one such). Phosphorus is much more available in warm weather than under cooler conditions.

RUTGERS 1979 TURFGRASS PROCEEDINGS

Volume 10 containing presentations of the August 1979 Turfgrass Conference and other research reports, was received from the Soil and Crops Department of Rutgers University in June. This has become one of the most authoritative annual turfgrass reports, especially with respect to the ratings of bluegrass and perennial ryegrass cultivars.

Bob Early, editor of Lawn Care Industry, provides the opening paper, and emphasizes the need for EPA and OSHA. He provides many statistics on trends within the industry, prospects for employment, and the magnitude of the "green industry". Watschke, Pennsylvania, discusses Veronica control (Dacthal 75W has given excellent results) and crabgrass prevention (a number of chemicals give excellent control, including a newcomer prosulfalin or 'Sward'). Glyphosate is generally promising for troublesome perennial grasses.

Shurtleff, Illinois, give a thorough review of "Controlling Turfgrass Diseases", that includes many pages of cultural practices, citation of diseases, and listing of chemicals. He includes as Table II the disease resistance of numerous bluegrass cultivars, a comparison reported elsewhere as Illinois research. Other papers follow on the Poa annua problem on golf course fairways, trees, for golf courses and their maintenance, and another paper by Watschke detailing the rather complicated control of annual bluegrass with chlorflurenol plus maleic hydrazide (touchy with desirable grasses). A number of papers deal specifically with golf course problems.

Richard Hurley reviews "Turfgrass Research for Athletic Fields in Europe", and concludes that more specific attention is deserving of such research in this country, where golf course and sod interests overshadow. The lawn care business is discussed from the landscaping viewpoint in a paper by Lombardi. Engel, Rutgers, reviews "Dormant Fertilization of Kentucky Bluegrass Lawn Turf", another way of saying late season or winter lawn feeding (he sees more advantage than disadvantage, compared to spring fertilization of bluegrass lawns). Mitchell, of Rutgers, discusses soil for sod, and the use of nettings in sod production (apparently a coming thing, to give earlier harvest and quicker turn-over, especially useful with bunchgrasses such as tall fescue).

Bob Russell updates "Seed Quality" in fine fashion, discussing what new labeling procedures permit and require. He is enthusiastic about the category "contains no other crop seed" for especially high quality seed, but emphasizes that not all seed needs to be of this quality.

Engel and Bussey, Rutgers, review slow-release nitrogen fertilization for bluegrass in summer; they find SCU (sulfur coated urea) gives a stronger, earlier performance than either IBDU or UF as measured by clippings, although later influence is fairly similar with all tested products. Best turf quality for eight weeks came from SCU fertilization, followed fairly closely by IBDU and UF. Engel and Bussey also discuss pre-emergence crabgrass herbicides. Oxadiazon has given the best crabgrass control over the longest term, with only dual applications of benefin being equal (96% control). A new product, EL-131, provided 88% control from a May application (but was a near failure in June, as was also oxadiazon). A number of familiar chemicals provided around 80% or better control, some being better with de-thatching and some without.

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Funk et al reviewed the new turf-type perennial ryegrasses. Ratings varied somewhat with location and for particular diseases, but the authors conclude that "the newer turf-type cultivars including Blazer, Yorktown II, Belle, Fiesta, Diplomat, Dasher, Citation, Omega, Regal, Loretta, Derby, Birdie, Yorktown, Pennfine and Manhattan performed well in all tests." They also note that, "Cultivars generally showing the best winter performance included Manhattan, Blazer, Yorktown II, Belle, Yorktown, Diplomat, and Omega - - Ryegrasses generally showing the best summer performance included Blazer, Yorktown II, Citation, Fiesta, Belle, Dasher, Diplomat, Derby, Regal, Omega, Birdie, and Pennfine." In the scoring averages for 1974 through 1977, Yorktown II led by a fair margin, with Blazer, Fiesta, Diplomat, Dasher, Omega, Citation, Yorktown and Derby following in that order. Pasture-type cultivars rated decidedly lower. At Adelphia Blazer led, well ahead of Yorktown II, Belle, Fiesta, Diplomat and Dasher. Yorktown II was markedly the most leafy, with a number of cultivars clustered from second through tenth places.

Dickson and Funk similarly review Kentucky bluegrass cultivars. In these tests common-type bluegrasses were at a disadvantage because the mowing height was only 3/4 inch. The authors note that a number of cultivars continue to show good resistance to stripe smut, including Brunswick, Touchdown, Adelphi, Glade, Enmundi, Plush, Ram I, Sydsport, and Vantage. A blend of 38 bluegrasses continues to show above average performance, the ratings becoming better as time goes on. Ratings for a given year vary, but the averages for seven years show Brunswick slightly in the lead, followed closely by Touchdown, and straight plantings or combinations that include Adelphi, Glade, Nugget, Plush, Enmundi, Parade and so on. Rating quite poorly among the 89 entries are common-type bluegrasses including Park and Kenblue, and in some instances cultivars which ranked well alone or in other combinations are only mediocre. The authors score all entries for incidence of stripe smut, leafspot, Fusarium blight and Poa annua invasion.

EARTHWORM INFLUENCE ON LAWNS

Karnok, Ohio, reports in the May, Lawn Care Industry, on the influence of earthworms, particularly in the control of turf thatch. He notes the influence earthworms have on soil, burrowing (channeling) and mixing, plus organic additions from digestion and worm casts. To encourage earthworms Karnok suggests that the turfgrass manager be careful with pesticides, adjust pH to a near neutral range, and keep soils moist and uncompacted. He lists these pesticides as having no adverse affect on earthworms: benefin, bensulide, dalapon, DCPA, linuron, diazinon, maleic hydrazide, paraquat, siduron and 2,4-D. On the other hand atrazine, and several insecticides and fungicides (anilazine, bandane, benomyl, calcium arsenate, carbaryl, chlordane, chlorothalonil, chlorpyrifos, and several others) are toxic or inhibitory to earthworms. He feels that introducing earthworms could have benefit, but notes that our understanding of earthworm ecology is limited and that if earthworms are not presently thriving, there may be good cause for it not correctable by new introductions. He notes the effectiveness of thatch control by earthworms (in a Columbus, Ohio, study lawns appreciably thatched averaged less than 5 earthworms per square yard, whereas those in which there was no thatch averaged more than 33 worms per square yard). He finds that biological thatch control applications (often based upon brewer's yeast) are ineffective.

TURFGRASS TRIALS WESTERN CANADA

A report was received in May from Doug Taylor and P. B. Harmsen, summarizing 1979 Turfgrass Trials at the Agassiz, British Columbia, research station. This represents a rather "mellow" climate, without great continental temperature extremes, and ample rainfall. Perhaps this is why ratings are frequently different from those commonplace in the United States. In briefly summarizing results attention will be paid chiefly to "appearance", although the authors include six other characteristics for which cultivars are also rated independently.

Among the fine fescues, spread was not great, with Grelo leading the ratings. Koket was third, Checker sixth, Banner eighth, Highlight fourteenth, among "Institute cultivars" of the Chewings type. Ensylva rated most highly among the creeping sorts. A former standard, Pennlawn, had the lowest rating of all.

Among the older plantings of Kentucky bluegrass (1976), Trampas was considerably ahead, Sydsport sixth, Merion seventh, Nugget ninth, Touchdown eleventh, Glade twelfth, Merit thirteenth, Baron fourteenth; Birka, Majestic, Adelphi, and Fylking were below median. On the other hand, for more recent plantings (1978) Fylking led, with Ram I seventh, Majestic eleventh, Adelphi nineteenth; Sydsport, Baron, Merit, Enmundi, Glade, Plush, Nugget, Touchdown, and Merion were considerably farther down the list in that order.

Among perennial ryegrasses, Loretta nosed out Fiesta and Manhattan by a small margin, with Citation sixth, Blazer seventh, Diplomat eighth, Regal ninth, Omega tenth, Pennfine eleventh, Derby sixteenth, Yorktown seventeenth, and others considerably farther down the list (including the Canadian Norlea, bred for winter hardiness, not too much of a factor in this test location).

Among seeded colonial bentgrasses Bardot was "tops", followed by Tracenta, with familiar American selections below median. Kingstown was leading velvet bentgrass. Among seeded creeping bentgrasses Penncross led, with Emerald third, and Prominent fourth. The appearance ratings of the seeded creeping bentgrasses were on par with those vegetatively planted.

LEAFSPOT ON BLUEGRASS REVIEWED

The March issue of Weeds, Trees and Turf carried a helpful series of presentations given at the 18th Nebraska Turfgrass Conference. Dr. Gerald Pepin, Chairman of the Institute's Variety Review Board covered "Plant Selection, Hybridization Produce New Varieties". The series of papers, beginning on page 50, should be consulted for details.

Leafspot disease on bluegrass is caused by several *Helminthosporium* (*Drechslera*) species. Hodges, Iowa, indicates that the seriousness of the disease relates to a number of factors, including age of the planting. The longer a cultivar is grown, the greater the leafspot. But symptoms can vary seasonally, with response to weather, daylength, light incidence, and so on. Older leaves approaching senescence are also more seriously afflicted.

Lesions on the bluegrass leaf increase in size as daylength shortens, so become more apparent as autumn rather than as spring progresses. Also, increased far-red light produces larger lesions and more yellowing of leaf tissue than does normal light. Since far-red light penetrates better than normal light, this may help explain increased disease incidence in the lower canopy of the bluegrass plant. Cool weather also favors leafspot disease, as does moisture and heavy fertilization. Herbicide treatment may predispose bluegrass to greater leafspot attack. Hodges summarizes the symptoms, and factors intensifying them, for each of the four seasons.

UPDATE ON PLANT DISEASES

Dr. M. C. Shurtleff, Illinois, sent his latest series of "Report on Plant Diseases", - individual write-ups on various lawn afflictions. Among them are updates of number 405, on Helminthosporium, revised in late 1979.

The same basic information as had been presented in earlier editions is included. Table 1, involving "Modern Kentucky Bluegrass Cultivars Adapted to Illinois and Reported to be Moderately to Highly Resistant to one or more Diseases" may be of especial interest. Primarily five groups of diseases are categorized (Helminthosporium, Leaf Smuts, Rust, Fusarium, and Sclerotinia Dollar Spot; Typhula is not fully reported).

These Variety Review Board Cultivars received "resistant" ratings for the first five disease types mentioned: Adelphi, Baron, Majestic, and Sydsport. Lacking resistance in only one category were: Bonnieblue (dollarspot) and Glade (Fusarium). Failure to receive a "resistant" rating does not necessarily indicate lack of resistance, but in some cases may reflect lack of information about the cultivar. Almost none of the cultivars lacked resistance to Helminthosporium (Vantage was the only one among VRB selections). Lack of resistance to the other diseases appears more frequent.

"RASEN" ISSUED

The March 1980 issue of the German publication, Rasen, edited by Professor Boeker of Bonn, was received in late May. All presentations were in German, but as is customary English summaries are given of major items.

Boeker experimented with planting depth for red fescue, perennial ryegrass and Kentucky bluegrass. Best emergence was achieved by mixing seed in the one-half-to-one centimeter zone. Seed buried 5 cm. deep did not emerge. Perennial ryegrass achieved some emergence at depths as deep as 3 cm. red fescue 2 cm., bluegrass 1 cm. respectively. Obviously, tolerance of planting depth correlates with seed size of these familiar lawn species.

Mehnert, of Freising, examined the fertility relationships of thatch on sports-grounds, some of which had received no topsoil. He found that the thatch layers showed higher cation exchange capacity than sandy-peat soils, and were little different from the soils in carbon-nitrogen ratios. Thatch layers tended to concentrate fertilizer nutrient. Where topsoil was mixed into the rootzone, earthworms helped mix the medium for greater uniformity.

Another paper by Kuttruff is of limited general interest, dealing with the use of iron sulfate for moss control (effectiveness generally short-lived). No very efficient or foolproof measures were found.

THATCH AND FERTILIZATION

Nelson et al, Illinois, report on experiments measuring available and slow-release nitrogen effects on thatched bluegrass turf, in the May-June Agronomy Journal. Urea, the soluble source, dispersed through the thatch much more than did IBDU, the insoluble source. Also, when cores of soil and of thatch were measured for volatilization, more nitrogen was lost from the soluble source than the insoluble. The authors conclude that for thatched turf, with grass rooting in the thatch, slow-release nitrogen fertilization might be the more efficient; however, thatch control might be a preferable technique.

RHODE ISLAND FUNGICIDE REPORT

Jackson and Dernoeden, Department of Plant Pathology, University of Rhode Island, issued their "Evaluation of Some Turfgrass Fungicides - 1979" in May. Most of the information is of a specialized nature, of interest mostly to professionals dealing with pathology. Very few homeowners will undertake the half dozen or so exacting treatments that are needed with fungicides for effective disease control.

All fungicides reduced dollarspot disease on bentgrass, especially Bayleton and CGA 64251. Exeter bentgrass was particularly susceptible to brown patch disease, against which some help was obtained from benomyl and Daconil 2787F. All fungicides helped control copperspot disease on velvet bentgrass. CGA48988 and Daconil 2787F provided exceptional curative control of yellow-tuft disease, but RP26019 intensified the disease.

One trial investigated residual effect of fungicides for control of stripe smut and leafspot on Merion bluegrass. Bayleton and EL222, both alone and combined with other fungicides, significantly reduced stripe smut for a two year period. Benomyl had mild residual effect but other fungicides tried were ineffective. The authors recommend a combination of Bayleton and RP26019 for exceptional residual stripe smut and leafspot disease control that improve sward density.

MISSOURI NEWS LETTER

Mvta is the title of a new newsletter, the first dated June 1980. Among the news items, there will be no field day in 1980 since considerable change-over of the research grounds is being undertaken. In addition to an extensive new bluegrass evaluation, tests are being made on tall fescues, and on various aspects of management of both warm-season, cool-season grasses. A new zoysia cultivar and a new bermudagrass likely will be released within the next several years, cooperatively with the University of Florida and Kansas State University respectively.

A report of great success using glyphosate for killing out bermudagrass (where it is a weed) is given; also successful use of crabgrass preventers with new zoysia plantings. Dr. Pepin is quoted on "Better Turf Varieties on the Way", his comments apparently adapted from a presentation to the last turfgrass conference in Missouri. He lists a number of cultivars that can be expected to become commercial shortly, both bluegrasses and perennial ryegrasses.

LAWN FAIRY RING

J. D. Smith, Canada, wonders if biologic control of fairy ring might not be possible, in a thorough discussion in the April Plant Disease. The article is quite worthwhile, with excellent illustrations and a full page diagram, all of which may be freely reprinted with credit. Smith speculates about lower plant interactions in the soil, feeling that in particular there is antagonism between fairy ring fungi and bacteria. Also, some fairy rings nullify the growth of others. Smith believes that one of the main inhibitions to grass from fairy ring is not allelopathy but blockage of moisture; he notes that on downslope sides of a ring there is usually a break in the circle, which may be due to a build up of water pressure and consequent bacterial flourishing. Since there is no very good chemical means for stopping fairy ring, Smith suggests cultivation techniques (dispersal of the mycelium, and reintroduction of competing microorganisms), a technique that has given persistent results in experimental work.

1980 CORNELL RECOMMENDATIONS FOR TURFGRASS

The 1980 Cornell recommendations for turfgrass has been released, received in June. This has long been something of a key outline for the Northeastern United States. General recommendations continue much as in the past, and call for 55% or more of Kentucky bluegrass (blend), 10-20% perennial ryegrass, and no more than 15% fine fescue in seed mixtures for sunny areas. For shade or on sands and gravels the fine fescue percentage is recommended raised to 65% or more.

A good many cultivars are named, including most of those on the Institute's Variety Review Board listing. Oxadiazon is now listed for both pre-emergence crabgrass and goosegrass control. Bentazon is suggested for nutsedge treatments. The wettable powder formulation of Dacthal is the only control suggested for Veronica filiformis. An extensive array of fungicides is listed, keyed to all of the familiar diseases; resistant cultivars are often listed. Insect control is likewise becoming fairly complicated, with 11 categories of pests (or associated troubles). Lannate is recommended for sod webworm control, with ethoprop and trichlorfon added to the more familiar older insecticides in many categories.

TURFGRASS RATINGS, CALIFORNIA

Gibeault et al discuss "Cool-Season Turfgrass Cultivar Performance, 1975-79" in Vol. 29, No. 4 of California Turfgrass Culture. Two different planting locations are rated (Santa Ana, on the south coast; Redwood City, on San Francisco Bay).

Top ranking at Santa Ana were (in this order): IS-28; Parade; Adelphi, Majestic and Rugby; Enmundi; Senic; and Vantage. Lowest rating were several common types, Enprima, Arista, Park, and not much higher Nugget, Fylking and Pennstar. At Redwood City Sydsport was tops; followed by Baron; Geronimo, A-34, Parade and Rugby; Adelphi; and Bonnieblue. Poorest in the rankings were Merion, Park, Nugget, Newport, Prato and Pennstar.

Among the perennial ryegrasses Derby and Pennfine were leaders at Santa Ana, followed by Manhattan, Diplomat and Clipper; poorest were Ensportia, Lamora, and common. At Redwood City Derby and Pennfine also lead, with Manhattan very close behind, then Citation and Ensportia; poorest were Linn and Cropper.

TURFGRASS IN TRAFFICKED AREAS

Shearman et al, Nebraska, report in the March/April Agronomy Journal on turfgrass plantings made into "paver" stones for areas such as parking lots (receiving vehicular traffic). The paver resembles concrete blocks (with more partitions and smaller cavities). Soil fills the interstices, into which seed is planted. The concrete framework presumably resists compaction from traffic. In this study, the complex did improve turfgrass wear and recuperation (except for Merion). Of the grasses tested in this system, Merion bluegrass, Manhattan perennial ryegrass, and Kentucky 31 tall fescue were the most tolerant to wear; crested wheatgrass and Highlight Chewings fescue showed poorest wear tolerance. In most cases the use of the paver blocks reduced the quality of the turf somewhat compared to planting the grass in the conventional way. In several cases winter survival was poorer with paver plantings.

RATINGS REPORT FROM KANSAS

Bob Carrow sends us under date of June 12, turfgrass evaluation reports made at Manhattan, Kansas, (Department of Horticulture, Kansas State University). This represents a climatic watershed, so is of considerable interest. A good bit of attention is given the hardiness of new bermudagrass selections which we won't comment upon here. Briefly the cool-season turfgrass ratings run as follows:

For three year plantings mowed at one inch (ignoring coded selections) Ram I, Adelphi, Glade, Sydsport, Baron and Touchdown have done well. At the two inch mowing height Ram I and Adelphi shared leadership with Glade, Baron, Fylking, Sydsport and Touchdown among other leaders.

An interesting test, in keeping with the times, is a "low maintenance" comparison. Here Arboretum ranked number one in each of three years, and was followed by "common" types such as Park. However, Baron, Plush, Merion and Majestic all did well at the low mowing height. At the two inch mowing height Arboretum was still best, followed closely by Park, and surprisingly Merion rated quite well. Baron, Plush, and Fylking scored favorably, too.

Not a whole lot of consistency has been shown year-to-year with the fine fescues. Polar has often been a leader, but Koket and Ruby rate highly, too.

Among perennial ryegrasses Diplomat led, followed closely by Citation and Derby (Citation ahead of Derby at the one inch height, Derby ahead of Citation at the two inch height). Other familiar names such as Regal, Manhattan, Yorktown and Pennfine were not far behind. In another scoring Citation led both in 1978 and 1977, with Diplomat and Derby close behind.

BLUEGRASS SEED PRODUCTION RESEARCH

Evans, Washington, reports in the May-June Agronomy Journal on methods for reducing the rate of the seed yield decline as bluegrass seed fields age. "Gapping" (in which sections of sod are removed) was quite effective, both on the first occasion and subsequently; this increased density of the panicles and seed weight per panicle, with improved seed yields of as much as 32%. Best seed production resulted from generous nitrogen fertilization (about 100-200 pounds N/A).

NEW TURFGRASS TEACHING TEXT

The book, Turfgrass Management, by A. J. Turgeon, amply illustrated by Floyd Giles, has just recently been published. The book is designed primarily as a college teaching text, and as such is probably the best currently available. It will no doubt prove of more interest to professionals than to amateur horticulturists and homeowners.

Inside covers are in color, the front depicting climatic zones worldwide, the rear turfgrass diseases (a fine help for identification). Appendices include one for conversion measurements, another for calibrations, and another for identifying pesticides by both chemical and common names. Turfgrasses are described at length in Chapter Three, and to an extent cultivars are characterized. Later chapters deal with the customary turf care practices, and afford an excellent gathering of information on "the latest" about fertilizers, pesticides, equipment, and so on.

All in all the book represents a commendable accumulation of information, including that from supportive disciplines that help document conclusions. The book may probe a little deeper and in more detail than the average person cares to go, but constitutes a valuable reference which can be looked to with confidence.