BETTER LAWN--HARVESTS

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Technical Pages

EXCUSE THE DELAY

Our "old faithful" mimeograph broke a cam, and we've had to retype the stencils for photocopying. We'll try to have Harvests back on schedule next quarter.

CHANGES COMING SMOOTHLY AT STAFF HEADQUARTERS

As members are aware from mailings sent during the quarter, Dr. Robert W. Schery will be retiring this year as Director of the Lawn Institute. Joyce Wening will continue on as acting director in Marysville under Dr. Schery's general supervision through summer, until Dr. Eliot Roberts finishes the academic year at the University of Rhode Island and assumes active directorship probably sometime in July. Dr. Roberts feels he can best serve the Institute operating from a new headquarters near Cooksville, Tennessee, where he owns acreage and has family.

Eliot Roberts is well known to many Institute members. That you may become better acquainted with him and his general plans, we have asked Eliot to "introduce" himself. Dr. Roberts has already made a two-day visit to Marysville to become acquainted with activities, equipment, and to learn about Institute traditions. His plans seem to be progressing smoothly, and no interruption in Institute services should occur. Mailings of such things as Harvests and the autumn press kit will be handled from Ohio until routines can be formally established in Tennessee. Thus members should contact Marysville as in the past, at least until July.

THE LAWN INSTITUTE SELECTS AN EXECUTIVE DIRECTOR

Dr. Eliot C. Roberts, professor of Soil Sciences at the University of Rhode Island has accepted the position of Director of the Lawn Institute effective July 1, 1982. Dr. Robert W. Schery has been Executive Director of the Institute since its founding. He has made retirement plans which will include continuing interest and activity in behalf of better lawns and gardens. Dr. Roberts and Dr. Schery are arranging for a smooth transition of affairs from the present headquarters office in Marysville, Ohio to Pleasant Hill, Tennessee.

Dr. Roberts is a native of the "Garden State", New Jersey. In early years, he developed an interest in plants and soils on the family farm in Burlington County. After service in the Navy during World War II he attended the University of Rhode Island and received the B.S. degree in Agricultural Chemistry in 1950. M.S. and Ph.D. degrees were earned at Rutgers University with major work in Soils and Plant Physiology in 1952 and 1955, respectively.

Dr. Roberts joined the faculty at the University of Massachusetts in 1954 as an Assistant Professor of Agronomy and was promoted to Associate Professor in 1957. He was major professor for turfgrass management students in the Stockbridge School of Agriculture and was Secretary of the Stockbridge School Advisory Council.

In 1959, Dr. Roberts was appointed Associate Professor of Agronomy and Associate Professor of Horticulture at Iowa State University, where he developed an interdepartmental program in turfgrass research and teaching. His research on injury to roadside vegetation from use of highway deicers and on mineral nutrition of turfgrasses generated information widely used throughout the Midwest. He was advanced to Professor in 1964 and he continued in this position until 1967, when he went to the University of Florida as Professor of Ornamental Horticulture and chairman of the department. He was administratively responsible for teaching, research and extension programs concerned with turfgrasses, annual and perennial flowers and woody ornamental plants.

In 1970 Dr. Roberts was appointed Professor of Plant and Soil Science and chairman of the department at the University of Rhode Island. This position involved directing, teaching, research and extension projects in crop science, soil science, horticulture, landscape architecture and mechanized agriculture that are relevant to the needs of an urban population.

Dr. Roberts has been a frequent speaker at Grounds Management Conferences throughout the United States and Canada and is the author or co-author of over 200 papers in refereed journals, in experiment station reports, Advances in Agronomy, popular or semi-technical trade journals, and conference proceedings. He was editor of the Proceedings of the Second International Turfgrass Research Conference published by the American Society of Agronomy in 1974.

Dr. Roberts maintains active membership in five professional associations and three honorary societies and has been recognized by assignment of positions of responsibility or by honorary membership in eight industry-sponsored associations. In 1971 he was elected Fellow of the American Society of Agronomy.

The Directorship of the Lawn Institute provides a unique opportunity to exercise skills in both Public Relations and Communications. The lawn practitioner and turfgrass research specialist should have an effective linkage through the Institute. As program leader for turfgrass teaching, research and extension and as department administrator for Horticulture and Plant and Soil Science programs, this combination of public relations emphasis and technical expertise has become functional for Dr. Roberts.

He feels strongly that the promotion of the lawn seed usage is a matter of relating a quality product to the needs of the consumer in such a way that confidence in successful use of the product is assured. Usually people can successfully accomplish what they believe they can do. Visualization of those processes helps in assuring success.

Dr. Roberts is enthusiastic about the Institute concept, appreciative of the past accomplishments and looks forward to building new identities in the future as we continue to promote the existing program.

GRASSLAND BOOK PUBLISHED

The book Amenity Grassland, an Ecological Perspective, has been published by Wiley and Sons, under the editorship of I. H. Rorison and Roderick Hunt, the University of Sheffield, U.K. The Institute was asked to review this book for HortScience, Journal of the American Society for Horticultural Science.

Fourteen experts provide the main chapters of the book (fifteen "poster abstracts" appear additionally), many of whom are ecologists providing ecologically directed presentations. However, ecology in Britain deals much with disturbed habitat. The book is concerned almost exclusively with the U.K., and the interest of turfgrass managers in the United States will be chiefly related to ideas generated in the discussions.

Amenity grasslands as considered include some intensively managed turf (lawns, playing fields, golf courses, race tracks, etc., constituting 1100 km^2); "trampled open spaces" (parks, road berms, reserves, commons, country parks, etc. constituting 6770 km^2); and "untrampled open spaces" (air fields, embankments, etc., accounting for about 630 km^2). The British philosophy is to clothe this with a groundcover (mainly grass, but other families are not excluded), utilizing as much as possible naturally adapted species for minimal maintenance. Most chapters of the book are in accord with this outlook, and even the chapter specifically concerned with herbicides suggests alternatives which avoid decreasing vegetative diversity.

Much detail can be found in the book, at least some of which might merit extrapolation for other parts of the world. In chapter 2, for example, the biomass, seasonal growth cycle, aggressiveness, and so on of numerous species is given (and 20 pages of appendices tell the kind of habitat where familiar grasses persist, predominate, and so on).

In discussing grass breeding, M.O. Humphreys feels that selecting cultivars from closely grazed sheep pasture has been adequate to this point for obtaining cultivars, in contrast to directed techniques. He also acknowledges the fact that volunteer Poa annua is ubiquitous and one of the more wear-resistant species for the U.K. climate. Of the species sown for intensively managed turf, the perennial ryegrasses are favored as the most wearable although Shilkrick seems now leaning away from bentgrasses in favor of Kentucky bluegrass as a companion species where wear is much of a factor.

GRASSLAND BOOK PUBLISHED - continued

Shildrick's chapter on Species and Cultivar Selection is almost the only presentation similar to what appears in turfgrass manuals in the USA; it reviews choices of species and cultivars under varying conditions. Shildrick also expresses an appreciation of the dead biomass (thatch) acknowledging that "the dead leaf mat" reduces the "area of bare, potentially slippery ground -- and provides 'grip'".

Haggar, in the chapter Weed Control and Vegetation Management by Herbicides, notes the usefulness of ethofumesate for selective removal of Poa annua, something only beginning in the United States. He remarks, too, on cultivars of perennial ryegrass having been bred or selected tolerant to low dosages of herbicides such as paraquat and dalapon (both of which he favors because they are reasonably harmless to clover, which, unlike the United States, is much valued in the sward). Haggar feels that bentgrass can be easily suppressed in perennial ryegrasses with low dosages of dalapon, as can be velvetgrass with asulam. A number of grass-suppressing herbicides are listed which can be used in winter to encourage spring growth of clover.

A disadvantage of perennial ryegrass that is mentioned is its inability to spread by rhizomes or stolons, which, coupled with low seed reserves in the soil, would result in little volunteer sprouting. Thus perennial ryegrass generally has to be "planted", which seems to be less preferred than a system of volunteer growth (at least in the management of less intensively managed amenity grasslands). Haggar also notes that it has been possible to change coarse, tussocky grasses of roadsides to more attractive fine fescue by selectively eliminating the coarser grasses with a combination of maleic hydrazide and 2,4-D in a single treatment applied in spring.

SEED STORY APPEARED

The lawnseed story prepared by Jerry Johnson for Lawn & Garden Marketing appeared in the February issue. The Institute had furnished much background material, and a color photograph which was utilized on page 18 (the magazine forgot to give the Institute credit, however!)

Johnson's treatment was good, under the title "Sorting Out the Confusing Lawn Seed Picture". He first noted the plethora of new cultivars, and then gave reasons for this comparatively recent abundance and the superiority of the new selections. A separate page, of differing color, entitled "Merchandising Features of Various Grass Species" described the individual turfgrasses and their strengths. Their usage as straight, blends or in mixtures was briefly discussed.

A separate box listed "Improvements Being Sought", in which Johnson asks rhetorically, "What are some of these superior traits that are appearing into today's new varieties? There are many, which would include: --- (fourteen virtues are itemized)".

MASSACHUSETTS HORTICULTURAL CONGRESS

On behalf of the Institute Dr. Schery attended the 8th Annual Massachusetts Horticultural Congress, held at the Dunfey Hotel, Hyannis, Massachusetts, January 20-21. This Congress is sponsored by the Massachusetts Horticultural Society, long the publisher of Horticulture magazine (now being handled on a shared arrangement with New Yorker magazine). Attendees included people in the landscape business as well as turf specialists and others concerned with urban environment. Dr. Schery had opportunity to visit with Dr. Joseph Troll and others from the University of Massachusetts, and with E. Dexter Davis, publisher of Greener Gardening, easier, the well-known horticultural newsletter distributed throughout New England.

First day presentations were divided into two parallel sections, one covering "Interior Plantscaping", the other woody plant materials, native perennials and wildflowers. Gypsy moth management was the focus of attention in the afternoon. Dr. Schery discussed lawngrasses the morning of January 21, this followed by expositions on turf insects and turf diseases in the afternoon by university people. Parallel meetings dealt with pheremones, tree anatomy and pruning.

It was estimated by Deborah Fanning, conference coordinator, that 400 registrants attended the Congress, of which 250 attended the turfgrass sessions. The reprint "Basics Behind Topflight Sodgrasses" was made available to all attending Dr. Schery's presentation, and additionally the Congress itself had reprints of the Institute's review "Science and the Lawn" which appeared in Horticulture magazine a year or so ago. A large selection of slides was shown, depicting various cultivars, their usages and trends both in Europe and North America. There will be no Proceedings of the Congress.

Dr. Schery first reviewed the apparent trends and concerns about lawns in this country, especially in view of recessionary times. But the real advantages that lawns possess give them a positive image and a public acceptance the value of which should not be underestimated. The capabilities of the major lawn species were discussed, and the advantages to be derived from selecting specialized elite cultivars from them. In the time remaining recent research anent managing these cultivars was explored to the extent that time permitted.

"SUPPLEMENT" PUBLISHED

During February the spring issue of "Lawns, Gardens and Pools", the joint Supplement published annually in recent years through the Pflaum Company, Reston, Virginia, was mailed out to somewhat over 3000 recipients. Joining with the Institute were the American Association of Nurserymen, the National Bark Producers Association, and the National Spa and Pool Institute. The Institute shared the top page with a lead off story, "Spring Lawn 'Get with-its'", and a photo.

Approximately 90 column inches of space in the 8-page, folio size publication were devoted to the Institute's contribution about lawngrasses. Unfortunately, an additional 30% of text provided was not used because of

"SUPPLEMENT" PUBLISHED - continued

space limitations. However, the column-inches alloted the Institute totaled its approximate share, and should suffice to get the "good seed-good grass" image across. Thirteen Institute titles were included all told. Some specific naming of cultivars was lost because of the deletions, but it is probably advantageous to have the lawn stories interspersed among others which may attract greater attention of publications.

It is felt that "Lawns, Gardens and Pools" is an effective means for reaching a wide range of smaller publications rather inexpensively, considering that the costs are shared by four associations. By time of our annual meeting perhaps some information will have been received on pickup and response to this year's "Supplement". Except for the story dealing with fertilizer, Institute stories dealt almost exclusively with lawnseed, lawngrasses and lawngrass care. Sample copies of the issue have been sent to members.

SPRING PRESS KIT ISSUED

After the seemingly inevitable delays with the post office (over proper imprintings for bulk mailing), the spring press kit was issued nationally about the second week of February. Gratifying usage has already been noted in requests coming in for literature (the offering of free Variety Review Board listings in exchange for a stamped envelope).

All members received a sample mailing, and are aware of the familiar "green grass" file folder with 18 pages of stories plus three back-up reprints used to document our credibility. This year there were 19 titles, ranging from two pages down to just a few lines. Chief emphasis, as always, was on the usefulness of high quality lawngrasses, with particular mention of selections accepted by the Institute's own Variety Review Board.

We try to convey in our press kits the idea that having an acceptable lawn need not be costly, should be fun, and is conveniently achievable in most climatic zones. One often feels that the reading public hears too much about "problems", - insidious diseases needing prolonged spraying with fungicides, hazards due to thatch, implications that elaborate watering systems are essential, many other "does" and "don'ts" that certain experts dwell upon perhaps more to display their knowledge than to offer practical encouragement. Having an acceptable lawn is not beyond the capability of almost anyone.

DISTANT REQUEST

Routed to us by Margaret Herbst was a request from Munn's Lawn Company in Glandore, South Australia. Mr. Munn had read of the Institute in a trade publication and asked to be put on the "mailing list". Several reprints were dispatch to Australia as a courtesy, and it was explained that we had no standard "mailing list" other than to press kit recipients and our own membership.

PLAUDITS FROM MASSACHUSETTS

"Dear Bob,

It was good to meet you at the Mass. Hort. Congress. Your presentation was excellent! I wish there had been more time for your subject because your organization was excellent. Perhaps next year.....

Cordially,

Dexter", publisher Greener Gardening, easier

STORY IN AMERICAN LAWN APPLICATOR

The March/April issue of the American Lawn Applicator carried the Institute's story "Managing Urban Habitat". The item suggests that those in charge of maintaining turfgrass don't always counter the negativism of modern realities (inflation, crises, and threats to the environment), even while their clientele hungers for reassurance and urban greenery. An understanding of the fundamental importance of green plants to mankind's well being should offer appeal, and a broad ecosystem approach is suggested. The technology, and the grass varieties, are available for topnotch accomplishments, but they should be properly used and realistic measures taken to proceed with confidence.

The article is being reprinted and will be made available to members, as well as used for an insert in mailings and press kits.

NEW PRINT-UP SENT OUT

In telephone "meetings" with Variety Review Board Chairman Dr. Gerald Pepin, International Seeds, Oregon, it became clear that some of our Variety Review Board listings were slightly out of date, not surprising given the lag time it takes to have these published as part of a lawn story in a magazine, and then in turn arranging for reprinting. Therefore, in order to have just what we wanted for spring inquiries engendered by the press kit, a four-page foldover entitled "Variety Review Board Lawn Cultivar Listings" was designed in-house and reproduced by photocopy. Several member firms have found this handy, and have asked for supplementary copies.

The leaflet basically epitomizes Variety Review Board policy, and the strengths of the accepted cool-season turfgrass species. Characteristics of each species are outlined, and the Variety Review Board cultivars within the species are listed, in most cases utilizing thumbnail characterization (only a line or two of space can be spared and still keep the leaflet within bounds). Finally, proprietors of these cultivars are named alphabetically in a back-page box, along with their addresses.

Leaflets of this sort have proven the only feasible means for answering inquiries which sometimes become voluminous, and which might otherwise require custom letters for which staff is not available to complete all the typing. Members are urged to take advantage of this listing while it is still current, because sooner or later a few withdrawals or additions will require updating.

INSTITUTE COLOR PHOTO USED

Lawn & Garden Marketing magazine has utilized one of the color transparencies provided for a story in their February lawncare issue. We're pleased to be of help to the magazine, and gain this additional publicity for the Institute.

NEW MAGAZINE MAKES ITS DEBUT

Louise Hinton, Managing Editor of Better Times, "America's Most Helpful Magazine", thanked the Institute for responding to an earlier inquiry. A complimentary copy of the first issue of Better Times was included. A spring press kit was sent to Ms. Hinton, as well as several custom items not utilized elsewhere this spring ("extras" from the spring press kit and Supplement). Better Times is not horticulturally oriented, but does include occasional discussions having to do with home grounds. Although the magazine is published from Florida, the readership is national and its editorial image embraces all regions.

TELEPHONE REQUEST HONORED

Gail Driskill of the Daily Oklahoman of Oklahoma City telephoned asking for editorial material for a special spring gardening section in the newspaper. The paper would also like to have color photos to embellish the presentation. A spring press kit was immediately dispatched to Ms. Driskill, and two color transparencies for "dress-up" illustrations.

ADDITION TO PRESS KIT MAILING REQUESTED

Lynn Skinner, publisher and manager of the Lee County Ledger, Leesburg, Georgia has requested to be added to our press kit mailing list. In exchange they will send us their horticultural magazine, JOE'S BULLETIN. JOE'S BULLETIN "Gardener's Guide to the Plant World", is published monthly.

"APPRECIATION" IS APPRECIATED

"Dear Dr. Schery,

> Again this year our Mass. Hort. Congress received rave reviews, and we feel its success was due in large part to the outstanding educational seminars presented at the Congress. Your presentation was very well received by those in attendance, and we appreciate your contribution to our event."
>
> Deborah M. Fanning, Coordinator

TECHNICAL SECTION

INSECTS RECEIVE TECHNICAL COVERAGE

The March/April American Lawn Applicator, (Vol. III, No. 2), reviews sod webworms in an article by Scott Sargent of Northrup King, and greenbugs by Dr. Daniel Potter of the University of Kentucky. The issue also contains an article on controlling weeds by Dr. Kageyama of Scotts.

Sargent notes that selective tolerance to sod webworm has been found among grass varieties. Scaldis hard fescue and Dawson fine fescue have shown excellent tolerance. Perennial ryegrasses appear more tolerant than bluegrasses or fine fescues. Several genera and species of sod webworm damage lawns throughout the United States, in all cases the damage being caused by larvae which live in "silk-lined" burrows at the base of the sod. Larvae overwinter in the sod, emerge as adults in the spring, then lay eggs to create new generations of larvae (in warm climates there may be several generations during summer). The lawn moth stage is not damaging to grass. The larvae chew off grass blades at their base during night, passing through four moulting stages during a span of about five weeks.

Potter, in his investigation of greenbugs, finds them only recently a serious pest of bluegrass and fine fescue lawns, although well-known on cereals. They are not damaging to perennial ryegrass, southern lawngrasses or most weed-grasses and broadleaf weeds. Greenbugs are small aphids that can reproduce parthenogenetically. Natural predators include ladybugs that normally help keep greenbugs under control. The greenbugs damage the grass foliage by piercing and toxifying soft tissues, and when in epidemic proportions can bleach an entire lawn. They seem to become most prevalent under trees or around structures, where damage may begin in June and continue into November. Greenbugs are probably spread by wind or by tracking, and overwinter as eggs to reinfest a second year. Little grass varietal selectivity seems to prevail so far as greenbug resistance is concerned, and greenbugs have been shown to quickly build genetic resistance to pesticides (chlorpyrifos, diazinon and malathion are often no longer effective where repeatedly used). Newer insecticides such as ascephate and pirimicarb are suggested, but should not be used on a preventive basis lest resistance be built to them too. Greenbugs appear to occur chiefly on lawns that are intensively managed.

BERMUDAGRASS SEED

Research reported by Ahring and Stritzke in the January Weed Science indicated that seed yields of bermudagrass could be increased by desiccating the seed fields with paraquat prior to harvest, but that the paraquat treatment markedly reduced seed germirability. However the inhibitory affects of paraquat on germination could be eliminated by hulling the seed and scaryifying the caryopses (a potassium nitrate solution rather than water was more effective as a moistening agent).

35TH NORTHWEST TURFGRASS CONFERENCE

The Proceedings of the 35th Northwest Turfgrass Conference, held in Olympia, Washington in September of 1981, was again an excellently presented book of about 180 pages. Included are cultivar ratings by the Washington research staff which will be of interest to members.

Opening papers are chiefly of golf course interest. Then Hickey and Ensign, Idaho, discuss Drought Resistant Turfgrass Cultivars. They quote conventional appraisal, which lists fine leaf fescues) Kentucky bluegrass) perennial ryegrass) colonial bentgrass) creeping bentgrass. In comparing Baron, Glade and Merion cultivars in a Parma, Idaha, test Baron rated best, Glade intermediate, and Merion least, but Glade had noticably greater root mass. 70 Kentucky bluegrasses, 45 fescues and 45 perennial ryegrasses were rated for drought resistance at Parma. Among the leading bluegrasses, in addition to Baron, were Brunswick, Cheri, Dormie, Entopper, Enoble, Helka, Majestic, Mystic, Vanessa, and Victa; leading fescues were Dawson, Fortress and Jamestown; leading perennial ryegrasses, Citation, Pennant, Regal, Sportiva, and Yorktown. Neatest mowing of the perennial ryegrasses under test were Citation, Loretta, Omega, Pennant, Regal and Yorktown. In order to increase drought resistance, the authors advocate increasing rooting depth by higher mowing, reducing fertilization irrigating thoroughly but less often.

Frelich, Scotts, discussed maintaining turf in the shade. Dixon, Occidental Chemical Co., reviewed turfgrass fertilization. Charts and flow diagrams showing the fate of nitrogen in the soil clarify this aspect of nutrient usage. Interaction of nitrogen and sulphur is considered, and the synergistic absorption of phosphate with ammonium nitrogen (but not nitrate).

Berger, Washington Department of Transportation, reviewed the effects of inflation on landscape maintenance. Results with growth regulants has been marginal to poor, including some death of grass where overlap occurs. A cost-saving order to stop mowing found employees reluctant to do so. Cost per acre cut is figured at $24.84, of which 56% is for labor, 44% for equipment. Roadsides now left unmowed are sprayed to contain brush about every three or four years. "Highly sensitive" (lawn-like areas at highway interchanges) are mowed 24-30 times per year, and otherwise treated like a lawn.

Other presentations involved growing flowers on the golf course, controlled release nitrogen sources (with numerous tables and figures), and a discussion of resistance to fungicides (as to benomyl and iprodione, for example). A systemic fungicide such as benomyl affects only two loci of protein synthesis, while a contact fungicide such as cycloheximide affects more than eight loci; the former is apt to evolve heritable bi-pass alternatives, but the latter is unlikely to do so (since so many concurrent evasions would be necessary).

Cook and Maggard, Oregon, report on ethofumesate for Poa annua control. The chemical worked well as a preemergent, but had little influence as a post-emergent. Turfgrasses showed good tolerance, and perennial ryegrass and red fescue seed seemed able to germinate and establish through preemergence treatments. Cook reported that Embark (growth control) often enhanced color of Poa annua, and at least with repeat treatments reduced flowering intensity (but since Poa annua flowers over a prolonged period, the effect of the treatment wore off and did not provide season-long repression). With perennial ryegrass discoloration and flower inhibitation occurred, and some color enhancement was noted after suppression subsided; multiple applications resulted in some thinning. Suppression of bluegrass and colonial bentgrass caused heavy invasion of Poa annua and mouseear chickweed..

Law, Washington, acknowledged at least partial Poa annua control through reduction of pH and phosphorus fertility. His studies are concerned with the mechanisms involved, - whether operative through aluminum toxicity, or etc. He extolled the use of a new computer for evaluating research results, and discussed managing turfgrass through regulation of nitrogen fertility. He notes that optimum root growth is obtained at low nitrogen levels, disease tolerance at low to moderate nitrogen levels (red thread and rust are worse at low nitrogen levels than at moderate or high ones, however), while high nitrogen levels favor leaf production. Damage can result from excessive fertilization that diminishes root growth, as in ability to resist certain soil insects, or resisting drought. For controlling Poa annua in bentgrass, he suggests modest fertilization for several months to encourage deep bentgrass rooting, then a heavy nitrogen application just a few weeks before endothall application so that the herbicide is more effective on lush Poa annua while the bentgrass is still reasonably tolerant.

Brauen et al rated perennial ryegrass cultivars at Puyallup. Based on two year averages, Diplomat scored highest, followed closely by Score, Blazer, and Ensporta. VRB cultivars following thereafter were Omega, Pennfine, Derby, Yorktown II, Pennant, Fiesta and Manhattan. Although all cultivars eventually developed rust, Diplomat, Blazer, Ensporta, Loretta, Aristocrat, Goalie, and Compas were least affected. Where clippings mulch was left on plots rust was less severe, possibly due to the added N input. In a separate trial Barry, Premier and Dasher rated very highly for mowing quality.

Kentucky bluegrass ratings are even more voluminous. Among VRB cultivars, highest rating were Sydsport, America and Majestic. Touchdown was the most susceptible cultivar to rust, but Bonnieblue, Merion, Adelphi, and Plush were moderately susceptible; Majestic was quite resistant.

35TH NORTHWEST TURFGRASS CONFERENCE - Continued

Based on a two year average score, highest rating for "turf quality" among VRB cultivars were Touchdown, followed by Sydsport, Bonnieblue, Birka, Glade, Merit, Merion, Baron, Enmundi, America, Majestic, Adelphi, Fylking, and Plush.

Striking differences were not apparent between fine fescue cultivars. For the two year averages, Koket was above the median, Banner about at median, Highlight below median. Among spreading fine fescues Ensylva rated second best, while Fortress was lower.

Brauen et al experimented with triclopyr, Dowco 290 (picolinic acid), and Lontrel (Dowco 290 plus 2,4-D). In general, at rates sufficiently strong to be effective for weed control turfgrass suffered phytotoxicity. It is possible that triclopyr alone or in combination may be useful for the elimination of velvetgrass in lawn turf? The same researchers found encouraging preliminary results with new root-absorbed growth regulators; EL500 and PP333 seemed to cause no phytotoxicity (EL500 actually improved the color in some cases).

20TH ANNUAL VIRGINIA TURFGRASS CONFERENCE

The Proceedings of the January, 1980 Virginia Turfgrass Conference were not received until February, about two years after the presentations were made. However, the reports are in general "timeless" and will be of some interest.

Beard, Texas, provides the keynote address, similar to that of the Ohio Turfgrass Conference (previous Harvests). He looks for difficulties particularly with water, to some extent with energy, and in general feels that stricter efficiency will be needed in all phases of management. Beard calls for further cultivar development, aiming to produce selections with slow growth rate and minimal demands for fertilization, irrigation, etc., and with the ability to resist insects as well as diseases. He feels that demands upon future turfgrass custodians will be equally as great as for improved grasses.

A number of the papers were targeted for golf course people, but have implication for lawns. Buchanan of the USGA seconds Beard's analysis, feeling that the trend is away from luxury on golf courses and more toward "the game" (even to the extent of having small fairways strategically placed rather than "country-club settings"). Schmidt, Virginia Tech, notes the importance of potassium in turfgrass nutrition, both for southern and northern species. He feels that heavier N fertilization calls for greater K also; that K will not favor Poa annua unless it is accompanied by P; that both P and K stimulate recovery of bluegrass from drought (P fertilization seems to help with K uptake but not the reverse); that K enhances recovery of dormant bermudagrass from sub-freezing conditions; and that K helps sustain grass against wear during dormancy.

Bingham approaches weed control from the viewpoint of which weeds are resistant to 2,4-D, and 2,4-D with certain additives (with silvex currently banned one useful component is now absent). 2,4-D is basic for reasons of effectiveness and economy, and controls by itself about half the broadleaf pests. Adding MCPP enlarges its effectiveness to 62%; including dicamba increases the range to about 90% (but a hazard of toxicity to ornamentals is introduced). To some extent, 2,4-DP seems substitutable for silvex. Only oxadiazon gives effective control for goosegrass (Eleusine).

Beard enlarges upon grass response to drought. He lists both tall fescues and red fescues as having good drought resistance (bluegrass is medium, perennial ryegrasses fair, creeping bentgrass and Poa trivalis poor). With warm season species buffalograss, bermudagrass, zoysia and bahiagrass receive excellent ratings, st. augustinegrass only fair, centipede poor. He provides a lengthy list of management options to help cope with drought (aerification, low nitrogen, plenty of potassium, high mowing, avoidance of herbicides, etc.).

A number of other papers have to do with golf course personnel, landscaping (hedges and barriers), preparation of a course for a tournament, green construction, course design, and so on. Hall, VPI, discusses buying and installing sod. Kidwell talks briefly about establishing warm season grasses vegetatively. Faiszt, VPI, lists ground covers suited to Virginia, and Shoulders reviews in detail the maintenance of football fields (for cool-season grasses he prefers Kentucky bluegrass, with perhaps up to 20% perennial ryegrass; he would mix cultivars, none to exceed 35% of any one bluegrass, from among Adelphi, Birka, Enmundi, Merion, Plush, Victa, or A-34; ryegrass candidates named include Birdie, Citation, Derby, Manhattan, Pennfine, and Yorktown II; where bluegrass is not well adapted, tall fescue can be used perhaps, best mixed with 10% of common bluegrass). In certain situations 100% perennial ryegrass might be recommended, particularly where repair has been frequent and the field is largely ryegrass anyway, but it is preferable in general to have rhizoming bluegrass present.

Murray, USDA, discusses USDA process compost sludge (about two parts wood chips to one part sewerage) for growing turfgrass. It is stimulative, but does require additional nitrogen and potassium. Donohue, VPI, notes that soil tests in Virginia are now computerized.

Schmidt, VPI, examines winter hardiness in bermudagrass. Complex situations have been encountered in Virginia. Slow, dragged-out spring has proven as detrimental to revival of bermudagrass as exposure to low temperatures during winter. It has also been observed that generous nitrogen fertilization in autumn diminishes winter survival, unless it is accompanied by ample potassium (in which case N becomes beneficial). Indeed, some research indicates that heavy potassium

fertility encourages spring recovery regardless of nitrogen. Wear endurance has been best when nitrogen is held fairly low. However, bermudagrass is less competitive against Poa annua under restrained nitrogen fertilization. Preemergence herbicides seem to interfere with bermudagrass regrowth in spring, but this can be offset by ample phosphorous. Such herbicides reduce quantity of grass roots when soil contact is made, and can be especially detrimental if applied just before the bermudagrass breaks dormancy in spring. In toto it seems as though spring response of bermudagrass relates to the sum of stresses during the dormancy period. Thinning in spring of cool-season grass winter-seeded into dormant bermuda helps the bermuda's recovery.

Hurto, in a second review about thatch for a non-golf audience, covers familiar aspects of the subject, (e.g. the low bulk-density of thatch and it's great porosity, it's low cation exchange capacity, the relative freedom with which salts pass through a thatch layer, tendency of thatch to dry out and not rewet easily, it's relative infertility, the possibility of thatch being a haven for pests or at least making it difficult to reach the pests with pesticides, absorption of organic phosphosates such as diazinon and Dursban by thatch, etc.) He cautions the lawn service industry to be concerned about thatch, an increasing threat, perhaps helping correct it through core cultivation.

The remaining papers mostly relate to the lawn service industry. A special problem is having to fit operations into a schedule that keeps equipment continuously active. Most speakers felt that the lawn service business is destined to become more competitive, and require more professional handling. Expansion may come through adding services (such as landscaping treatments), more than by fighting for new customers. A trend towards smaller, more flexible, specialized equipment seems developing.

Ratcliffe, Beltsville, reviews the USDA program for checking chinch-bug resistance of turfgrass. Cultivar differences have been found. In the laboratory Adelphi was one of the least tolerant, but Bonnie-blue, Baron and Newport among the most tolerant. In field plots, Manhattan, Pennfine and Score showed commendable resistance. Differences among cultivars are for the most part not statistically very meaningful, however.

Other presentations deal with insect control in Virginia, pesticide safety, and a final paper by Hall of Virginia Tech takes a realistic review of what lawn services can practically accomplish under a regimen of three, four or five treatments per year (the usual range). In all cases, Hall recommends early autumn and a late autumn fertilization (and probably a spring feeding, to justify the service, even though the Virginia experts are cool to spring and summer fertilization).

Broadleaf weed controls would be anticipated for spring and early autumn, crabgrass prevention for spring, and possibly insecticide treatments once or twice depending upon the circumstances. Hall states, "The five treatment program does provide for fairly adequate management coverage on most lawns.", but fewer treatments leave some gaps. He notes that the cost of materials accounts for only 10 to 20% of lawn service expenses, so that the very best products should be used to provide satisfaction.

OKLAHOMA ROADSIDE SUMMARY

Wayne Huffine and his colleagues issued a final report on "Selection, Establishment, and Maintenance of Roadside Vegetation" for Oklahoma, under date of January, 1982. Wayne is now retired from Oklahoma State University, but is continuing work with the highway department. Members interested in less familiar groundcovers (the six grasses emphasized in the Oklahoma seedings are little bluestem, plain bluestem, sideoats gramma, buffalograss, weeping lovegrass and switchgrass) may be interested in obtaining this report, which gives details on seeding rates, mixtures, and planting recommendations. Pertinent herbicide findings are also given, stressing cost/benefit evaluations.

Test plantings were not always consistent, variation often depending upon whether a north or south slope was seeded. Little bluestem and switchgrass seemed to peter out in mixtures by the end of the first growing year, but on the other hand, sideoats gramma increased significantly in percent of composition in late summer and early autumn. Seeding experiments in northcentral Oklahoma indicated that 45 lbs of bulk seed per acre provided a very good protective cover. Weeping lovegrass, at only a few pounds of PLS per acre, was able to contribute materially after a three year period. On north-facing filled slopes the authors find, "In general, sideoats gramma and switchgrass perform better than all other grasses -- in providing a protective groundcover --".

For seeding bermudagrass, both siduron and oxadiazon were found too toxic as weed preventers, but light rates of terbutryn and metribuzin were generally satisfactory. Glyphosate was deemed too expensive for more than limited usage, including usage against rhizomatous Johnsongrass (even though for this weed it proved the most effective control). It was felt that three applications of MSMA could be applied at a cost per acre that would run less than half as much as for glyphosate. Other herbicide experiences, at specific times and rates, are detailed in the text.

SLUDGE MAY AFFECT NITROGEN RELATIONSHIPS IN THE SOIL

A report by Chang and Broadbent, in the January/March Journal of Environmental Quality indicate that trace metals often found in sludge can interfere with nitrogen transformations in the soil. At 400 ppm all metals were inhibitory, but in general chromium>cadmiun>copper>zinc>manganese>lead.

WEED CONTROL IN GEORGIA

Johnson, Georgia, reports in the January Weed Science, that crabgrass and goosegrass were successfully controlled in his experiments with bensulide and oxadiazon applied in spring, given follow-up lighter treatments in subsequent years. Oxadiazon was the only herbicide that controlled goosegrass completely (even when used full rate one spring and not reapplied for the following two years). The experiments were on both bluegrass and bermudagrass turfs. Best results for controlling "winter weeds" c me from full applications both spring and autumn the first year, followed by half rates at the same time at subsequent years. Ecological changes occurred; - bensulide resulted in increase of speedwell (Veronica arvensis) and hopclover (Trifolium agrarium), while wild parsnip (Pastinaca sativa) and a sandwort (Arenaria serpyllifolia) increased under oxadiazon treatments. Other preemergence turf herbicides less successful with the crabgrass and goosegrass (DCPA and benefin) also resulted in increases of certain weeds, such as spurweed (Soliva) and wild parsnip.

GRASS INCOMPATIBILITIES

J. Heslop-Harrison, U.K., takes an in-depth look at interactions affecting cross-incompatibility in the grass family, in the March 12 issue of Science. Some of the discussion is a little "deep" for understanding other than by experts of grass reproductive anatomy, but the discussions do have a bearing upon pecularities within the grass family that influence breeding of new cultivars (including interspecific and intergeneric crosses).

The author recognizes the grass family as being one of the most highly evolved of the Monocots, and finds that frequently there is lack of coadaptation of pollen and stigma for interspecific crosses. He generalizes, "But often there is difficulty in getting even as far as the first generation because of prefertilization barriers operating between the receipt of pollen and the entry of the tube into the embryo sac.--- Attempts to hybridize different species can be frustrated by the difficulty of obtaining the first, critical fertilizations."

Heslop-Harrison also notes, "Grass pollens show an unusual degree of structural and functional specialization, reflecting the advanced status of the family --." He goes on to analyze both genetic and mechanical blockages to fertilization, with genetic similarity/difference controlling a "stop" signal for many species. Surprisingly the barrier to fertilization is often mechanical, such as failure of the pollen tube to follow proper channels, detect the micropyle, or even enlarge quickly enough to escape callose occlusion on the style and stigma.

Examples of self-incompatibility and cross-incompatibility are reviewed, with perennial ryegrass being one of the species fairly well investigated. It is apparent that a complicated progression of events takes place prior to fertilization in grasses, one or more of which can function as a barrier to sexual reproduction and crossing.

CULTIVAR EVALUATIONS RECEIVED FROM WESTERN CANADA

We are grateful for the "summary of results - 1981" received from the research branch, Canada Agriculture, Agassiz, B.C. in early March. The conclusions are especially appropriate for humid climates like those of western Washington and Oregon.

Twenty-one Chewings fescues, six slender creeping, six creeping, and six hard fescues were first compared. In general statistical differences proved not to be great. Koket and Banner were among the top five Chewings ratings, and Ensylva led the creeping category. Concluding comments by the authors read, "Koket, Banner, Menuet and Highlight Chewings fescues continued to exhibit superior quality---".

Sixty bluegrasses were compared in a 1978 planting. Bristol led the ratings, with Sydsport tied for fourth, followed closely by Merit, Baron, Enmundi and Adelphi. Bonnieblue and Majestic fell near the median, with Touchdown, Glade, Fylking, Ram I and Plush below median. The authors conclude, "Bristol continued to hold top spot in performance ratings. Geronimo slipped somewhat this year due to leafspot damage--". Scenic was very badly damaged by leafspot, and Park was notably weak against weed invasion. Not a great deal of difference was shown between cultivars so far as thatch accumulation was concerned.

Perennial ryegrasses, from a 1978 planting, showed Fiesta in the lead for 1981, followed closely by Loretta and Elka, with Yorktown II, Diplomat, Manhattan, Pennfine and several other VRB selections showing up well, too. Norlea, a Canadian selection, rated second-to-last among the 39 entrants, and Beaumont (a meadow fescue) ranked poorer than any of the perennial ryegrasses. The authors comment that, "Fiesta and Loretta continue to hold top rank. Elka is in the same class, with particularly good mowing quality and deserves consideration for licencing. Yorktown II, Diplomat, Manhattan, and Pennfine have maintained a high level of performance in this third year of testing."

Only a few bentgrasses were rated: of those grown on soil Penncross was first, Emerald second.

ZOYSIA THATCH CONTROL

Dunn et al, Missouri, reports in the November/December Agronomy Journal on management of Meyer zoysia in the upper South. Vertical slicing and fairly low (about three-fourths inch) mowing decreased thatch appreciably year by year. However, neither fertilizer rates nor solubility had much influence. Tall-mowed zoysia (about an inch and a half) suffered greater winter injury than did shorter zoysia, and seemed to be frequently infested with large populations of nematodes. Over a period of time Kentucky bluegrass tended to invade taller zoysia following thatch removal. The authors conclude that Meyer zoysia will make a respectable turf over a period of several years if mowed fairly short, and is provided annual thatch removal, irrigation, and fertilization at moderate rates.

TALL FESCUES LAUDED

Riordan, Nebraska, counsels the use of tall fescue for transitional zone plantings, including Nebraska. His review appears in the February Park Maintenance. He notes that Kentucky-31, first discovered as an ecotype in Kentucky in 1890, has consistently been top-rating for Nebraska until the recent advent of "turf-type" cultivars. Now Rebel, Falcon, Olympic, and Houndog seem to be even better, but the releases are so recent that the University has only two growing years to judge by. Riordan particularly likes their finer texture and improved density; persistance is apparently quite good.

20TH ANNIVERSARY CELEBRATED

Weeds Trees & Turf, March, helped celebrate its 20th anniversary with a review of Jacklin Seed Company. New cultivars for which Jacklin is proprietor are listed, and the Jacklin research program is reviewed. Jacklin leadership in lawnseed production is emphasized.

Although the Institute is not given credit, the lead picture (page 20) shows natural bluegrass harvesting in Missouri in the 1950's. It is taken from a photo furnished by the Institute to Weeds Trees & Turf for their historical review of the lawnseed industry last year. In spite of promises by editor Shank, photos have never been returned to Marysville.

This issue also carries a lengthy discussion on weed control, and the herbicides used to accomplish it, both for turf and ornamentals. A listing of chemical manufacturers winds up the item. This is a handy listing to have on file, for so many chemicals are involved these days that one can hardly keep all in mind. A table for control of weeds in southern turfgrasses is adapted from Johnson, Georgia.

CONTROL OF KIKUYUGRASS

The March issue of Western Landscaping News reprints a Cudney et al report taken from California Agriculture, in which methods for controlling Kikuyugrass in turf are explored. No treatment completely and permanently eliminated the Kikuyugrass. However, a glyphosate spraying reduced it appreciably (the browned thatch could be removed in 48 hours), and reestablishment from seeds in the soil was inhibited by immediate (and repeated) use of the pre-emergent siduron. The gains were best sustained if treated areas were immediately overseeded with species that competed strongly (tall fescue was best, perennial ryegrass good and superior to Kentucky bluegrass). However, even under the most favorable circumstances Kikuyugrass reinvaded within two years, though its presence was considerably decreased from the initial condition. Kikuyugrass, similar in appearance to st. augustine, makes a durable cover and is often tolerated for lawns in Southern California. But it is an unwanted weed in finer-textured plantings such as on bowling greens, golf courses, and top-flight lawns. It has become established in coastal areas of California from San Francisco southward, and of course is widespread throughout the world tropics.

MARYLAND REPORT EMPHASIZES PERENNIAL RYEGRASS

Dernoeden, Maryland, is quoted in the March Lawn Care Industry concerning use of the new perennial ryegrasses for turf. Although perennial ryegrass was once chiefly used for soil stabilization, today's improved cultivars find great utility in overseeding damaged turfs of all kinds (including both bluegrasses and bermudagrass in Maryland). Dernoeden emphasizes that the new perennial ryegrasses overseeded into bermudagrass in autumn will withstand the low mowing height generally accorded bermudagrass fields. The ryegrass can be eliminated for revival of the bermudagrass in spring with a pronamide treatment.

Dernodeden is impressed by improved disease-resistance of modern perennial ryegrasses, their rapid establishment, good wear, and reasonable management demands. He still finds some difficulty in their quality of mowing, (especially at time of seed head formation), susceptibility to disease, and recuperativeness. The newer cultivars have proven more hardy through winter than common ryegrass. Dernodeden cites Citation, Pennfine and Pennant as the cultivars more tolerant of heat. He recommends holding perennial ryegrass to 20% or less in mixture with Kentucky bluegrass for general lawn seeding.

LAWN RENOVATION EXTOLLED

Mello, Illinois, reporting in the March Lawn Care Industry, discusses his firm's lawn maintenance program. It may well be that more and more lawn care services will have to include seeding. Mello recommends coring and removal of thatch, but emphasizes improvement through slit-seeding (in which seed is automatically fed into cuts made by disc-like devices). He's in favor of the numerous new cultivars, which provide disease-resistance alternatives to old Merion (prevalent in many of the lawns in northern Illinois). He uses a blend of fine fescues with Glade bluegrass and some perennial ryegrass in his seedings.

OFFBEAT TURFGRASS HAPPENINGS

The winter (March, 1982) issue of Plants & Gardens, Brooklyn Botanic Gardens, highlights gardening and horticultural events of the year. In this issue, (reprinted from Crops & Soils under the title "Is Grass Dangerous to Trees?) allelopathy may seem unduly alarming, emphasized as it is in a botanical garden publication.

Stunted growth of plants surrounded by grass is often presumed due to competition for moisture and fertility. But Fales and Wakefield show that to some extent it may be due to chemicals exuded from grass roots, - an instance of allelopathy. They grew dogwood and forsythia surrounded by turf, and with turf removed. Growth was superior where free from grass. The difference was not because of lack of fertility or water, which were ample. Rather leachates from the grass roots inhibited the plants. The authors conclude, "that leachates from perennial ryegrass, red fescues, and Kentucky bluegrass all suppressed the growth of the two ornamental plant species, ---".