WEEDS TREES and TURF 1972 ARTICLE INDEX

KEY: Feature article (fa); news story, (ns); conference report, (cr); book report, (br); obituary, (o); and editorial, (ed); (c) column.

Δ		
Λ	Tomas T	2-
Accutral Industry Iluitos Chamicals and Air (fa)	Issue I	10
Accutrol — Industry Unites Chemicals and Air (fa)	Aug	10
Accutof — industry Unites Chemicals and Air (Ia) Adelphi, Birth of A Bluegrass (fa) (Aerial Bucket), On the Job In A Bucket, Hoosier Arborist Tells How (fa) Agriculture, Yearbook of (ed) Air and Chemicals, Industry Unites — Accutrol (fa) Alaska, Applicator Use Laws, Part I (fa) Alaska, Applicator Use Laws Part I (fa)	Aug.	40
Hoosier Arborist Tells How (fa)	And	20
Agriculture Veerbook of (ed)	Sont	23
Air and Chemicals Industry Unites — Accutrol (fa)	Apr	18
Alahama Annlicator Ilea Laws Part I (fa)	Oct	8
Alaska, Applicator Use Laws, Part I (fa)	Oct	8
(Aluminum) Nozzles and Spray Systems by (Donald R. Weber (fa) American Sod Producers Assn. Stages California Sod Blast (cr) American Sod Producers Association Visits		
(Donald R Weber (fa)	Tan	10
American Sod Producers Assn Stages		10
California Sod Blast (cr)	Apr	54
American Sod Producers Association Visits		01
	Sent	42
Amur, White, Florida's \$2.8 Million Aquatic Plant Research and Control Program by	DCP t.	
Plant Research and Control Program by		
Dr. Alva P. Burkhalter (ta)	July	20
Aquatic Herbicides, How We Reduced Drift With Directa Spra by Vernon Meyers (fa)		
With Directa Spra by Vernon Meyers (fa)	July	16
Aquatic Herbicides, New Possibilities by		
Dr. C. Hiltibran (fa) (Aquatic), Modern Biocides — A New Dimension to Water's Complex Environment by Dr. Charles	July	26
(Aquatic), Modern Biocides — A New Dimension		
to Water's Complex Environment by Dr. Charles		
R. Walker (fa) A Quiet Happy New Year (ed)	July	14
A Quiet Happy New Year (ed)	Dec.	9
Aquatic Weed Control, Slow Release Herbicides.		
Aquatic Weed Control, Slow Release Herbicides, (A New View In by N. F. Cardarelli) Aquatic Weed History, Century Old Problem (fa)	Mav	16
Aquatic Weed History, Century Old Problem (fa)		
by Julian J. Raynes (Aquatic Weed), Hydrilla In Iowa (ns) Aquatic Weeds—A National Problem (cr)	July	12
(Aquatic Weed), Hydrilla In Iowa (ns)	Oct.	14
Aquatic Weeds — A National Problem (cr)	Sept.	28
Aquatic Weeds, Common, Aquatic Herbicides by Dr. Robert C. Hiltibran (fa) (Applicator, Custom), Injections System Keeps Nematodes In Check (fa) Applicators, International Pesticide, Inc.,		
by Dr. Robert C. Hiltibran (fa)	July	26
(Applicator, Custom), Injections System		
Keeps Nematodes In Check (fa)	May	20
Applicators, International Pesticide, Inc.,		
(Board of Directors (cr)	INOV.	10
Applicators, International Pesticide, Inc.,		
Convention (cr)	Nov.	16
Applicators, International Pesticide, Inc., Convention (cr) Applicator's Tea Party (ed) Applicator Use Laws, Part I (fa) Applicator Use Laws, Part II (fa) (Arboriculture), Prognosis for the Wounded Tree by Dan Neely (fa) Arborist, DED Control Kindles Strong Arborist Interest (ns)	Nov.	4
Applicator Use Laws, Part I (fa)	Oct.	8
Applicator Use Laws, Part II (fa)	Nov.	9
(Arboriculture), Prognosis for the Wounded		
Tree by Dan Neely (fa)	Aug.	16
Arborist, DED Control Kindles Strong Arborist		
Interest (ns) Arborist, Hoosier Tells How, On the Job In	June	18
Arborist, Hoosier Tells How, On the Job In		
A Bucket (fa)	Aug.	29
Arborists, International Shade Tree	Contract of	
Conference Report 48th Annual (cr)	Oct.	18
Conference Report 48th Annual (cr) Arborists, National Association, Elects Officers (cr) Arizona, Applicator Use Laws, Part I (fa) Arkansas, Applicator Use Laws, Part I (fa) Arvida Corporation, Integrated Land	Apr.	38
Arizona, Applicator Use Laws, Part I (fa)	Oct.	9
Arkansas, Applicator Use Laws, Part I (fa)	Oct.	9
Arvida Corporation, Integrated Land	A COLUMN	-
Development (fa)	Jan.	8
Associations, Green Industry (fa)	Dec.	75
Development (fa) Associations, Green Industry (fa) Banvel, Victorious War On Brush (ns)	Sept.	24

Equipment Directory

Snowblowers

Tractor, electric start, automatic transmission

Yazoo Manufacturing Co., 3607 Livingston Rd., Jackson, Miss. 39216

Yazoo Power Mowers, rotary, lawn; push, self-propelled, rider

Yazoo Edger

York Rakes, Mill and Watson Sts., Unadilla, N.Y. 13849 Rakes (York), landscape equipment

Zonolite, W. R. Grace & Co., P.O. Box 517, Travelers Rest, S.C. 29690

Vermiculite, soil conditioner Horticultural Perlie

Terra-Lite

Redi-Earth, synthetic soil

Zurn Industries, Inc., Hays Mfg., 12th and Plum, Erie, Pa. 16512

(See Hays Mfg.)

Б	-	
Baron, Bullish On, by Peter Loft and	Issue P	g.
Baron, Bullish On, by Peter Loft and John Morrissey (ns) Benlate, Dutch Elm Disease (fa) (Benlate), DED Control Kindles Strong Arborist Interest (ns) Benlate, Tidewater and Metropolitan Shade Tree Confer	Feb.	25
(Benlate), DED Control Kindles Strong	-	10
Benlate, Tidewater and Metropolitan Shade Tree Confer	rences	18
Discuss Benlate Fungicide (cr) Biocides, Modern — A New Dimension to Water's	Dec. '	74
Complex Environment by Dr. Charles R. Walker (fa)	July	14
Complex Environment by Dr. Charles R. Walker (fa) Biological Control for Gypsy Moth (ns) Birth of A Bluegrass (fa) (Brass) Nozzles and Spray Systems by	Mar.	57
(Brass) Nozzles and Spray Systems by	Ton	10
Donald R. Weber (fa) (Brush Control), Accutrol — Industry Unites Chemicals and Air (fa)	Jan.	10
Chemicals and Air (fa) Brush Control, Giant Brushroller Compresses	Apr.	18
Chemicals and Air (1a) Brush Control, Giant Brushroller Compresses Brush (ns) Brush (ns) Brush Control Victorious War On (ns)	Sept.	44
Bucket Safety Occupational Safety and Health Act (ed)	Aug.	6
Bullish on Baron by Peter Loft and John Morrissey (ns)	Feb :	25
Business), Chem-Trol Weed Control, A	G	00
Business), Golf Course Development Outlook-1972	Sept.	20
by Harry C. Eckhoff (fa) (Business), Marketing Order Concept A Necessity	Feb.	18
for Sod Producers by Tony Tashnick (fa)	Nov. :	30
Bullish on Baron by Peter Loft and John Morrissey (ns) Business), Chem-Trol Weed Control, A Business With A Future (fa) Business), Golf Course Development Outlook-1972 by Harry C. Eckhoff (fa) Business), Marketing Order Concept A Necessity for Sod Producers by Tony Tashnick (fa) Business), Selling A Tree Program to The City by William T. Bell (fa)	Aug.	23
California, Applicator Use Laws, Part I (fa)	Oct.	9
and the Environment (fa)	Feb.	28
Memory Gardens by Michael Lillis (fa)	Nov.	37
(Ceramic) Nozzies and Spray Systems by Donald R. Weber (fa)	Jan	10
California, Applicator Use Laws, Part I (fa) California, The View from, Turf Pest Control and the Environment (fa) (Cemetery), Super Duals Protect Turf At Memory Gardens by Michael Lillis (fa) (Ceramic) Nozzles and Spray Systems by Donald R. Weber (fa) Chain Saw, How to Select A Pro-Grade by Hank Harvey (fa) Chemical Contamination, Modern Biocides—A New Dimension to Water's Complex Environment		14
Chemical Contamination, Modern Biocides — A	Aug.	14
Chemical Contamination, Modern Biocides — A New Dimension to Water's Complex Environment by Dr. Charles R. Walker (fa) Chemicals and Air, Industry Unites — Accutrol (fa) Chemicals, Applicator Use Laws, Part II (fa) Chemicals, Federal Environmental Pesticide Control Act (ns) Chemicals Reduce Maintenance Costs for Maryland Highways (ns) Chemicals, Turfgrass Retardation With by D. M. Elkins (fa) Chemical Weed Control Cuts Labor Costs In Half (fa) Future (fa)	Tuly	14
Chemicals and Air, Industry Unites — Accutrol (fa)	Apr.	18
Chemicals, Applicator Use Laws, Part II (fa)	Nov.	9
Chemicals Reduce Maintenance Costs for Manual	Nov.	7
Highways (ns)	Mar.	14
Chemicals, Turfgrass Retardation With by D. M. Elkins (fa)	May	18
Chemical Weed Control Cuts Labor Costs In Half (fa)	Mar.	19
Future (fa)	Sept.	20
Chicken Feed from Clippings (ns)	May	56
Future (fa) Chicken Feed from Clippings (ns) Collecting That Hard Earned Dollar (fa) Colorado, Applicator Use Laws, Part I (fa) Compost, Organic, Fertilizer from Animal Wastes (fa) Conference, ASPA Stages California Sod Blast (cr) Conference, 43rd International (GCSAA) Turfgrass (cr) Connecticut, Applicator Use Laws, (Part I) Contractor Cites Building and Remodeling Trends, What A Golf Course Should Be by Richard M. Phelps (fa) Control Program and Research, Florida's \$2.8 Million Aquatic Plant by Dr. Alva P. Burkhalter (fa) Cutrine-Diquat Combo Registered In Florida (ns)	Oct.	9
Compost, Organic, Fertilizer from Animal Wastes (fa) Conference, ASPA Stages California Sod Blast (cr)	Sept.	15
Conference, 43rd International (GCSAA) Turfgrass (cr)	Apr.	23
Contractor Cites Building and Remodeling	Oct.	9
Trends, What A Golf Course Should Be by Richard M. Phelps (fa)	June	16
Control Program and Research, Florida's \$2.8	- June	10
Cutrine-Diquat Combo Registered In Florida (ns)	JulySept.	20 28
D		
Delaware, Applicator Use Laws, Part I (fa)	June	9
Development, Integrated Land, The Green Industry At Work (fa) Diquat-Cutrine Combo Registered In Florida (ns) Directa Spra — New Compact Sprayer, How We Reduced Drift With Aquatic Herbicides by Vernon Meyers (fa) Directory of Sod Terms (fa) Disease Control, Programmed Turf by Robert T. Miller (fa) Drainage Ditches, Herbicides Keep Jacksonville Open by C. C. Holbrook (fa) Dutch Elm Disease Control Kindles Strong Arborist Interest (ns) Dutch Elm Disease, Lab Seeks Solutions to Tree Problems by Dr. Charles L. Wilson (fa) Dutch Elm Disease, One Step Closer to a Cure (fa) Dutch Elm Disease, Tidewater and Metropolitan Shade Conferences Discuss Benlate Fungicide (cr)	Ton	0
Diquat-Cutrine Combo Registered In Florida (ns)	Sept.	28
Directa Spra — New Compact Sprayer, How We Reduced Drift With Aquatic Herbicides by		
Vernon Meyers (fa)	July	16
Disease Control, Programmed Turf by	June	43
Robert T. Miller (fa) Drainage Ditches, Herbicides Keep Jacksonville	Feb.	16
Open by C. C. Holbrook (fa)	Mar.	16
Arborist Interest (ns)	June	18
Dutch Elm Disease, Lab Seeks Solutions to Tree	Feb	11
Dutch Elm Disease, One Step Closer to a Cure (fa)	Apr.	13
Conferences Discuss Benlate Fungicide (cr)	Tree Dec.	74
T		
Englagist's View The Bights of Way		
Ecologist's View, The, Rights-of-Way Maintenance — The Future by Dr. Donald A.		
Spencer (fa)	June	10
Spencer (fa) (Ecology), The Public Relations of Public Spraying by Jim Hansen (fa) Employees, Continuous Training, Technique	May	12
for Holding (fa)	Jan.	28
Employees, Continuous Training, Technique for Holding (fa) Environment, A New Dimension to Water's Complex, Modern Biocides — by Dr. Charles R. Walker (fa) Environment, Effects of Weed Control On the by W. A. Harvey		
R. Walker (fa)	July	14
by W. A. Harvey	Jan.	14
Environmental Pesticide Control Bill (ed)	Mar.	8
Environment, Effects of Weed Control On the by W. A. Harvey Environmental Pesticide Control Bill (ed) Environment, Turf Pest Control and the (fa) Environmental Protection Agency, Dutch Elm Disease (fa) (Fquirment) Acquirel - Industry, United Chemicals	Feb.	20
Disease (fa) (Equipment), Accutrol — Industry Unites Chemicals and Air (fa)	Apr.	13
and Air (fa) (Equipment) ASPA Visite Canada In Force (an)	Apr.	18
and Air (fa) (Equipment), ASPA Visits Canada In Force (cr) (Equipment), Aquatic Weed History, Century Old Problem (fa)	sept.	42
Old Problem (fa) (Equipment), Aquatic Weeds A National Problem (cr)	July Sept.	12 28

	Issue Pg.
(Equipment), Giant Brushroller Compresses Brush (ns)	Sept. 44
Brush (ns) (Equipment), How to Select A Pro-Grade Chain Saw by Hank Harvey (fa) (Equipment), How We Reduced Drift With Aquatic	
Herbicides, Directa Spra by Vernon Meyers (fa) (Equipment), Nozzles and Spray Systems by Donald R. Weber (fa)	July 16
Donald R. Weber (fa) (Equipment), On the Job In A Bucket (fa)	Jan. 10
(Tanianana) Danian Com Cafata bar	
(Equipment), Power Saw Sarety by Hank Harvey, Jr. (fa) (Equipment), Power Saws In Trees by Blair E. Caplinger (fa) (Equipment), Power Saws, Why They Fail—and How to Avoid Trouble by Hank F. Harvey, Jr. (fa) (Equipment), Pros and Cons of Rolled or Palletized Sad by Robert Hawkins (fa)	Aug. 18
(Equipment), Power Saws, Why They Fail — and How to Avoid Trouble by Hank F. Harvey, Jr. (fa)	Sept. 16
(Equipment), Pros and Cons of Rolled or Palletized Sod by Robert Hawkins (fa)	July 44
Palletized Sod by Robert Hawkins (fa) (Equipment), Sod Producers Association Stages California Sod Blast (cr)	April 53
California Sod Blast (cr) (Equipment), Super Duals Protect Turf At Memory Gardens by Michael Lillis (fa)	Nov. 37
F	
Federal Environmental Pesticide Control Act (ns)	Nov. 7
Fertilizer from Animal Wastes (fa) (Fertilizer), Slow Release Nitrogen, Golf Course Labor Saver (fa)	Sept. 22
Course Labor Saver (fa) (Fertilizer), Sulfur for Turfgrass by Dr. Fred V. Grau (ns)	Feb. 22
V. Grau (ns) (Fertilizer), Turf Nutrition by Wm. E. Knoop (fa) Florida, Applicator Use Laws, Part I (fa) Florida's \$2.8 Million Aquatic Plant Research and Control Program by Dr. Alva P. Burkhalter (fa) Fluorescence and the Federal Seed Act by	Feb. 14 Oct. 9
Florida's \$2.8 Million Aquatic Plant Research and Control Program by Dr. Alva P. Burkhalter (fa)	July 20
Fluorescence and the Federal Seed Act by C. R. Edwards (fa)	May 52
C. R. Edwards (fa) (Fungicide), DED Control Kindles Strong Arborist Interest (ns)	June 18
Robert T. Miller (fa)	Feb. 16
by Dr. Charles L. Wilson (fa)	Feb. 44
Interest (ns) (Fungicides), Programmed Turf Disease Control by Robert T. Miller (fa) Fusarium, Lab Seeks Solutions to Tree Problems by Dr. Charles L. Wilson (fa) Future, The, Rights-of-Way Maintenance — The Ecologist's View by Dr. Donald A. Spencer (fa) Future, The — Rights-of-Way Maintenance, The Public View by Roland C. Clement (fa) Future, The, — The Utility View, Rights-of-Way Maintenance by Gordon Mundrane (fa)	June 10
The Public View by Roland C. Clement (fa)	June 13
Maintenance by Gordon Mundrane (fa)	June 12
G	
Georgia, Applicator Use Laws, Part I	Oct. 22
Golf Course, A, What Should Be by Richard M. Phelps (fa) Golf Course Development Outlook — 1972	June 16
Golf Course Development Outlook — 1972 by Harry C. Eckhoff (fa) Golf Course, Even In Las Vegas You Can't Gamble With Turf (ns) (Golf Course), Integrated Land Development (fa)	Feb. 18
(Golf Course), Integrated Land Development (fa)	July 18
Golf Course, Oakland Hills, Grooming The Monster (fa)	Sept. 22
Monster (fa) GCSAA New Director, Conrad L. Scheetz (ns) Golf Course Superintendents Association of America	Oct. 12 Nov. 26
don course pupermitting induction of innerital,	
Golf Course Superintendents, 43rd International Turfgrass Conference and Show (cr)	Apr. 23
Officers and Directors for 1972 (cr) Golf Course Superintendents, 43rd International Turfgrass Conference and Show (cr) (Green Industry At Work), Integrated Land Development (fa) Green Industry, Our Brave New World (ed) Growth Retardants, Turfgrass Retardation With Chemicals by D. M. Elkins (fa) Guideline Specifications for Sodding (fa) Gypsy Moth, Biological Control for (ns) Gypsy Moth, Imidan Deals Blow to (ns)	Jan. 8
Green Industry, Our Brave New World (ed) Growth Retardants, Turfgrass Retardation	Apr. 8
With Chemicals by D. M. Elkins (fa) Guideline Specifications for Sodding (fa)	June 43
Gypsy Moth, Biological Control for (ns) Gypsy Moth, Imidan Deals Blow to (ns)	Mar. 57 Aug. 42
Н	
Hat Trick, The (ed)	May 8
Hat Trick, The (ed) Harvey, Hank, Jr., "Collecting That Hard Earned Dollar" Hawaii, Applicator Use Laws, Part I (Herbicide), Effects of Weed Control On the Environment by W. A. Harvey (fa) Herbicides, Aquatic, How We Reduced Drift With by Vernon Myers (fa) Herbicides, Aquatic, New Possibilities by Dr. Robert C. Hiltibran (fa)	Dec. 12 Oct. 22
Environment by W. A. Harvey (fa)	Jan. 14
by Vernon Myers (fa) Herbicides Aquatic New Possibilities by	July 16
(Herbicides) Chemical Weed Control Cuts Labor	
Costs In Half (fa) Herbicides Keep Jacksonville Drainage Ditches	Mar. 19
Costs in Hair (1a) Herbicides Keep Jacksonville Drainage Ditches Open by C. C. Holbrook (fa) Herbicides, Slow Release, A New View In Aquatic Weed Control by N. F. Cardarelli (fa) Herbicide, Tandex (ns) (Herbicide), Weed Control Western Style, Krovar I (fa) Highways, Chemicals Reduce Maintenance Costs for Maryland (ns)	Mar. 16
Aquatic Weed Control by N. F. Cardarelli (fa) Herbicide, Tandex (ns)	May 16
(Herbicide), Weed Control Western Style, Krovar I (fa)	Sept. 11
for Maryland (ns)	Mar. 14
Highways, Chemicals Reduce Maintenance Costs for Maryland (ns) Hyacinth Control Society, Aquatic Weeds — A National Problem (cr) Hyacinth, Water, Weevil Battalion Charges (fa) Hyacinths, Water, Aquatic Weed History by Julian J. Raynes (fa) Hydrilla In Iowa (ns)	Sept. 28
Hyacinths, Water, Aquatic Weed History by Julian J. Raynes (fa)	July 19
Hydrilla In Iowa (ns)	Oct. 14
Ico Binks Turfgross (no)	
Idaho, Applicator Use Laws, Part I (fa)	Oct. 22
Imidan Deals Decisive Blow to Gypsy Moth (ns)	Aug. 42
Ice Rinks, Turfgrass (ns) Idaho, Applicator Use Laws, Part I (fa) Illinois, Applicator Use Laws, Part I (fa) Imidan Deals Decisive Blow to Gypsy Moth (ns) Indiana, Applicator Use Laws, Part I (fa) Industry, Our Dynamic Green (ed) Industry's Role In Weed Science by Dr. Glenn C. Klingman (fa)	Feb. 8
Dr. Glenn C. Klingman (fa)	Mar. 22

Industry Unites Chemicals and Air - Accutrol (fa)	Issue Pg. Apr. 18
Industrial Weed Conference, Texas, Vegetation Maintenance (fa)	Dec. 12
Injection System Keeps Nematodes In Check (fa)	May 20 Mar. 57
Insecticide Imidan Deals Decisive Blow to	
Gypsy Moth (ns) (Insecticide), Turf Pest Control and the Environment (fa)	Feb. 28
International Shade Tree Conference Report, 48th Annual (cr)	Oct. 18
Environment (fa) International Shade Tree Conference Report, 48th Annual (cr) Iowa, Applicator Use Laws, Part I (fa) (Irrigation), Even In Las Vegas You Can't Gamble With Turf (ns)	Oct. 22
With Turf (ns)	July 18
J-K	O-4 00
Kentucky, Applicators Use Laws, Part One (1a) Kentucky, Applicators Use Laws, Part I (fa)	Oct. 22
Kentucky Bluegrass, Audiphi, Birdi of A (1a) Kentucky Bluegrass, Bullish On Baron by Bottomy John Morningov (20)	Aug. 40
Kentucky Bluegrass, The Search for Shade Tolerant	Fob 10
J-K Kansas, Applicator Use Laws, Part One (fa) Kentucky, Applicators Use Laws, Part I (fa) Kentucky Bluegrass, Adelphi, Birth of A (fa) Kentucky Bluegrass, Bullish On Baron by Peter Loft and John Morrissey (ns) Kentucky Bluegrass, The Search for Shade Tolerant Turf, Nugget (ns) Krovar I, Weed Control Western Style (fa)	Sept. 11
L	
Lab Seeks Solutions to Tree Problems by Dr. Charles L. Wilson (fa)	Feb. 44
Lab Seeks Solutions to Tree Problems by Dr. Charles L. Wilson (fa) Labor, Chemical Weed Control Cuts Costs In Half (fa)	Mar. 19
Half (fa) Landscape Design, Instant Shade In, Mature Tree Transplants by Ross Barnekow (fa) (Landscape), Match Tree Selection to Use Area by William H. Collins (fa) Las Vegas, Even In, You Can't Gamble With Turf (ns) (Legislation), Federal Environmental Pesticide Control Act (ns) Loaders, They Tip'em to Test'em (fa) Louisiana, Applicator Use Laws, Part I (fa)	Oct. 16
(Landscape), Match Tree Selection to Use Area by William H. Collins (fa)	Jan. 20
Las Vegas, Even In, You Can't Gamble With Turf (ns) (Legislation), Federal Environmental Pesticide	July 18
Control Act (ns) Loaders, They Tip'em to Test'em (fa)	Nov. 7 Dec. 20
Louisiana, Applicator Use Laws, Part I (fa)	Oct. 24
M	
Maine, Applicator Use Laws, Part I Maintenance, Chemicals Reduce Costs for	Oct. 24
Maryland Highway (ns) (Maintenance), Even In Las Vegas You Can't	Mar. 14
Maintenance, Grooming the Monster (fa)	Oct. 12
(Maintenance), Herbicides Keep Jacksonville Drainage Ditches Open by C. C. Holbrook (fa)	Mar. 16
Management Factors Affecting Sod Heating (fa)	Jan. 8
Maryland, Applicator Use Laws, Part I (fa)	Oct. 24
Mature Tree Transplants, Instant Shade In Landscape Design by Ross Branekow (fa)	Oct. 16
Michigan, Applicator Use Laws, Part I	Oct. 24
Mississippi, Applicator Use Laws, Part I (fa)	Oct. 24
Money, Collecting That Hard Earned Dollar (fa)	Dec. 21
Maine, Applicator Use Laws, Part I Maintenance, Chemicals Reduce Costs for Maryland Highway (ns) (Maintenance), Even In Las Vegas You Can't Gamble With Turf (ns) Maintenance, Grooming the Monster (fa) (Maintenance), Herbicides Keep Jacksonville Drainage Ditches Open by C. C. Holbrook (fa) (Maintenance) Integrated Land Development (fa) Management Factors Affecting Sod Heating (fa) Maryland, Applicator Use Laws, Part I (fa) Massachusetts, Applicator Use Laws, Part I Mature Tree Transplants, Instant Shade In Landscape Design by Ross Branekow (fa) Michigan, Applicator Use Laws, Part I Minnesota, Applicator Use Laws, Part I (fa) Mississipi, Applicator Use Laws, Part I (fa) Mississipi, Applicator Use Laws, Part I (fa) Mississipi, Applicator Use Laws, Part I (fa) Missouri, Applicator Use Laws, Part I (fa) Money, Collecting That Hard Earned Dollar (fa) Montana, Applicator Use Laws, Part II (fa)	
14	
Conference, GCSAA (cr) Nebraska, Applicator Use Laws, Part II (fa)	Apr. 23
Nematodes, Înjection System, Keeps In Check (fa)	May 20 Nov. 9
New Hampshire, Applicator Use Laws, Part II (fa)	Nov. 9
New Mexico, Applicator Use Laws, Part II (fa)	Nov. 10
Nitrogen, Slow Release, Golf Course Labor-Saver (fa)	Sept. 22
North Carolina, Applicator Use Laws, Part II (fa)	Nov. 10
Nader, Ralph, 43rd International Turfgrass Conference, GCSAA (cr) Nebraska, Applicator Use Laws, Part II (fa) Nematodes, Injection System, Keeps In Check (fa) Newada, Applicator Use Laws, Part II (fa) New Hampshire, Applicator Use Laws, Part II (fa) New Mexico, Applicator Use Laws, Part II (fa) New Mexico, Applicator Use Laws, Part II (fa) New York, Applicators Use Laws, Part II (fa) Nitrogen, Slow Release, Golf Course Labor-Saver (fa) Nitrogen, Turf Nutrition by William E. Knoop (fa) North Carolina, Applicator Use Laws, Part II (fa) North Dakota, Applicator Use Laws, Part II (fa) Nozzles and Spray Systems by Donald R. Weber (fa) Nugget, The Search for Shade Tolerant Turf (ns)	Jan. 10
Nugget, The Search for Shade Tolerant Turf (ns)	Feb. 19
Occupational Safety and Health Act,	
Bucket Safety (ed) Occupational Safety and Health Act Explained	Aug. 6
Occupational Safety and Health Act, Bucket Safety (ed) Occupational Safety and Health Act Explained ISTC 48th Annual (cr) Occupational Safety and Health Act of 1970 (ed) Ohio, Applicator Use Laws, Part II (fa) Ohio Turfgrass Conference, Fifth Annual Show and Tell (cr)	Oct. 18
Ohio, Applicator Use Laws, Part II (fa) Ohio Turfgrass Conference, Fifth Annual Show and	Nov. 10
Tell (cr) Oklahoma Applicator Use Laws Part II (fa)	Jan. 24.
Oregon, Applicator Use Laws, Part II (fa)	Nov. 11
Tell (cr) Oklahoma, Applicator Use Laws, Part II (fa) Oregon, Applicator Use Laws, Part II (fa) Organizations, A Voice United (ed) Ornamentals, Winter-Hardy, The Key Is Year-Round Fertility (fa)	Anr 26
P-Q	
Pennfine, A Ryegrass That Cuts Clean (fa)	Nov. 12
Pennsylvania, Applicator Use Laws, Part II (fa) Pest Control, Turf and the Environment (fa)	Nov. 11 Feb. 28
Pennfine, A Ryegrass That Cuts Clean (fa) Pennsylvania, Applicator Use Laws, Part II (fa) Pest Control, Turf and the Environment (fa) Pesticide Control Bill, Environmental (ed) Pesticide, Federal Environmental Control Act (ns) Pesticide Future Is Brighter, The,	Mar. 8 Nov. 7
Pesticide Future Is Brighter, The, by Cecil F. Kerr (ed)	Mar. 10
Pesticide Use and Applicator Laws, Part I (fa) Pesticide Use and Applicator Laws, Part I (fa)	Oct. 8
by Cecil F. Kerr (ed) Pesticide Use and Applicator Laws, Part I (fa) Pesticide Use and Applicator Laws, Part I (fa) Phosphorus, Turf Nutrition by William E. Knoop (fa) (Plastic) Nozzles and Spray Systems by	Feb. 14
Donald R. Weber (fa) Potassium, Turf Nutrition, by William F. Knoon (fa)	Jan. 10
Power Saw Safety by Hank Harvey, Jr. (fa) Power Saws In Trees by Blair E. Caplinger (fa)	Oct. 11
(Plastic) Nozzies and Spray Systems by Donald R. Weber (fa) Potassium, Turf Nutrition, by William E. Knoop (fa) Power Saw Safety by Hank Harvey, Jr. (fa) Power Saws In Trees by Blair E. Caplinger (fa) Power Saws, Why They Fail, and How to Avoid Troub by Hank Harvey, Jr. Prognosis for the Wounded Tree by Dan Neely	ole Sept 16
Prognosis for the Wounded Tree by Dan Neely	Aug. 16

Programmed Word Disease Gentuck	Issue F	g.
Programmed Turf Disease Control by Robert T. Miller (fa) Public Relations of Public Spraying, The	Feb.	16
Public Relations of Public Spraying, The by Jim Hansen (fa)	May	12
by Jim Hansen (fa) Public View, The, Rights-of-Way Maintenance — The Future by Roland C. Clement (fa) Puerto Rico, Applicator Use Laws, Part II (fa)	Tuno	19
Puerto Rico, Applicator Use Laws, Part II (fa)	Nov.	36
Research and Control Program, Florida's \$2.8 Million		
Aquatic Plant by Dr. Alva P. Burkhalter (fa)	July	20
Rights-of-Way Maintenance — The Future, The Ecologis	t's	11
Rights-of-Way Maintenance — The Future, The Public	June	10
View by Roland C. Clement (fa) Rights-of-Way Maintenance — The Future. The Utility	June	13
View by Gordon Mundrane (fa)	June	12
Ryegrass Breeding, Fluorescence and	NOV.	12
Ryegrass Certification, Fluorescence In	May	28
by E. E. Hardin (fa) Ryegrass Recommendations, Fluorescence As	May	28
Related to by Dr. Henry W. Indyk (fa)	May	14
by Richard H. Bailey, Dr. Henry W. Indyk,	35	
Research and Control Program, Florida's \$2.8 Million Aquatic Plant by Dr. Alva P. Burkhalter (fa) Rhode Island, Applicator Use Laws, Part II (fa) Rights-of-Way Maintenance — The Future, The Ecologis View by Dr. Donald A. Spencer (fa) Rights-of-Way Maintenance — The Future, The Public View by Roland C. Clement (fa) Rights-of-Way Maintenance — The Future, The Utility View by Gordon Mundranc (fa) Ryegrass Preeding, Fluorescence and by Dr. C. Reed Funk (fa) Ryegrass Certification, Fluorescence In by E. E. Hardin (fa) Ryegrass Recommendations, Fluorescence As Related to by Dr. Henry W. Indyk (fa) Ryegrass Species, Ultraviolet Light Helps Decode by Richard H. Bailey, Dr. Henry W. Indyk, Dr. C. Reed Funk, E. E. Martin and C. R. Edwards	Way	14
Safety Abuses (ed) Safety and Health Act of 1970, On the (ed) (Safety), 18 Steps to Safe Tree Climbing by Larry Holkenborg (fa) Safety of Turf — Natural or Synthetic by John H Hall (fa)	Jan.	4
(Safety), 18 Steps to Safe Tree Climbing by Larry Holkenborg (fa)	Aug.	20
Safety of Turi — Natural or Synthetic	Oct	40
Safety, Power Saw by Hank Harvey, Jr. (fa)	Oct.	11
by John H. Hall (fa) Safety, Power Saw by Hank Harvey, Jr. (fa) Saw, Chain, How to Select A Pro-Grade by Hank Harvey, Jr. (fa)	Aug.	14
Saws, Power, Satety by Hank Harvey, Jr. (fa)	Oct.	11
Avoid Trouble by Hank Harvey, Jr. (fa)	Sept.	16
Search for Shade Tolerant Turf, The (ns)	Feb.	19
Blair E. Caplinger (fa) Saws, Power, Satety by Hank Harvey, Jr. (fa) Saws, Power, Satety by Hank Harvey, Jr. (fa) Saws, Power, Why They Fail — And How to Avoid Trouble by Hank Harvey, Jr. (fa) Scheetz, Conrad L., New GCSAA Director (ns) Search for Shade Tolerant Turf, The (ns) (Seed), Bullish On Baron by Peter Loft and John Morrissey (ns)	Feb.	25
(Seed), The Search for Shade Tolerant Turf (ns)	Feb.	19
by Richard H. Bailey, Dr. Henry W. Indyk,		
C. R. Edwards (fa)	May	14
(Seed), Bullish On Baron by Peter Loft and John Morrissey (ns) (Seed), The Search for Shade Tolerant Turf (ns) (Seed), Ultraviolet Light Helps Decode Ryegrass Specie by Richard H. Bailey, Dr. Henry W. Indyk, Dr. C. Reed Funk, E. E. Hardin and C. R. Edwards (fa) Selling A Tree Program to the City by William T. Bell (fa) Slow Release Herbicides, A New View in Aquatic Weed Control by N. F. Cardarelli (fa) (Sod), Bullish On Baron by Peter Loft and John Morrissey (ns)	Aug.	23
Slow Release Herbicides, A New View in Aquatic Weed Control by N. F. Cardarelli (fa)	May	16
(Sod), Bullish On Baron by Peter Loft and	Feb	25
(Sod), Chicken Feed from Clippings (ns)	May	56
Sod for A Mobile Home Estate (fa)	Dec.	16
John Morrissey (ns) (Sod), Chicken Feed from Clippings (ns) Sod, Consider Thin Cut (fa) Sod for A Mobile Home Estate (fa) (Sod), Management Factors Affecting Sod Heating (fa) Sod Producers Association, American, Stages California Sod Rlast (cr)	Mar.	44
Sod Blast (cr) Sod Producers, Marketing Order Concept A Necessity For by Tony Tashnick (fa) Sod Producer's Two Goals, A, District Two Goals, A,	Apr.	53
For by Tony Tashnick (fa)	Nov.	30
by Richard E. Schmidt (fa) Sod, Rolled or Palletized, Pros and Cons of	Jan.	31
by Robert Hawkins (fa)	July	44
Soil Fumigant Aids Organic Compost, Fertilizer from	June	43
Animal Wastes (fa) South Carolina, Applicator Use Laws, Part II (fa)	Sept.	15 11
by Robert Hawkins (fa) Sod Terms, Directory of (fa) Soil Fumigant Aids Organic Compost, Fertilizer from Animal Wastes (fa) South Carolina, Applicator Use Laws, Part II (fa) South Dakota, Applicator Use Laws, Part II (fa) Southern Weed Science Society Report, Silver Anniversary, (cr)	Nov.	11
Anniversary (cr)	Mar.	30
Southern Weed Science Society Report, Silver Anniversary (cr) (Sprayer), Directa Spra — New Compact Sprayer, How Reduced Drift With Aquatic Herbicides by Vernon Meyers (fa)	Tules	10
(Spraying) Accutrol — Industry Unites Chemicals	July	10
Spraying, Accutrol — Industry Unites Chemicals and Air (fa) Spraying, The Public Relations of Public by Jim Hansen (fa) Spray Systems, Nozzles and by Donald R. Weber (fa) (Steel, Stainless and Hardened) Nozzles and Spray Systems by Donald R. Weber (fa) Sulfur for Turigrass by Dr. Fred V. Grau (ns) Sullvan, Bill, "Vegetation Maintenance" Survey, The Hat Trick (ed)	Apr.	18
by Jim Hansen (fa) Spray Systems, Nozzles and by Donald R. Weber (fa)	May	12 10
(Steel, Stainless and Hardened) Nozzles and	Ton	10
Sulfur for Turfgrass by Dr. Fred V. Grau (ns)	Feb.	22
Survey, The Hat Trick (ed)	May	8
T		
Tandex, Herbicide (ns) Temperature, Low, Turfgrass Kill by Dr. James B. Beard (fa) Tennessee, Applicator Use Laws, Part II (fa) Texas, Applicator Use Laws, Part II (fa) They Tivem to Test'em (fa)	Sept.	40
Temperature, Low, Turfgrass Kill by Dr. James B. Beard (fa)	Nov.	14
Tennessee, Applicator Use Laws, Part II (fa)	Nov.	11
THEY TIP CHI TO TEST CHI (TR)		20
Tidewater and Metropolitan Shade Tree Conferences Discuss Benlate Fungicide (cr) (Tires), Super Duals Protect Turf At Memory Gardens by Michael Lillis (fa) (Training, Continuous) Technique for Holding Employees (fs) (Tree Care), 18 Steps to Safe Tree Climbing	Dec.	74
Gardens by Michael Lillis (fa)	Nov.	37
(Training, Continuous) Technique for Holding Employees (fs)	Jan.	28
(Tree Care), 18 Steps to Safe Tree Climbing by Larry Holkenborg (fa)	Aug	20
(Tree Care), How to Select A Pro-Grade Chain	Aug	14
Tree Care, On The Job In A Bucket, Hoosier	A.	27
Tree Program, Selling A, to the City	Aug.	29
(Training, Continuous) Technique for Holding Employees (fs) (Tree Care), 18 Steps to Safe Tree Climbing by Larry Holkenborg (fa) (Tree Care), How to Select A Pro-Grade Chain Saw by Hank Harvey (fa) Tree Care, On The Job In A Bucket, Hoosier Arborist Tells How (fa) Tree Program, Selling A, to the City by William T. Bell (fa) (Trees), Dutch Elm Disease, One Step Closer to A Cure (fa)	Aug.	23
A Cure (fa)	Apr.	13

Tree Selection, Match to Use Area by William H. Collins (fa) (Trees) International Shade Tree Conference Report, 48th Annual (cr) (Trees), Lab Seeks Solutions to Tree Problems by Dr. Charles L. Wilson (fa) Trees, Outdoor, for Indoor Use (fa) Trees, Power Saws In by Blair E. Caplinger (fa) Tree Transplants, Mature, Instant Shade In Landscape Design by Ross Barnekow (fa) Tree, Wounded, Prognosis for the by Dan Neeley (fa) (Tungsten Carbide) Nozzles and Spray Systems by Donald R. Weber (fa) Turf Disease Control, Programmed by Robert T. Miller (fa) (Turfgrass), A Ryegrass That Cuts Clean (fa) Turfgrass Conference and Show, 43rd International (GCSAA) (cr)	ssue	Pg.
by watering the Country (10)	Jan	20
(Trees) International Shade Tree Conference Report,	Oct	10
(Trees), Lab Seeks Solutions to Tree Problems		10
by Dr. Charles L. Wilson (fa) Trees, Outdoor, for Indoor Use (fa)	Nov.	20
Trees, Power Saws In by Blair E. Caplinger (fa)	Aug.	18
Landscape Design by Ross Barnekow (fa)	.Oct.	16
by Dan Neeley (fa)	Aug.	16
by Donald R. Weber (fa)	.Jan.	10
Turf Disease Control, Programmed by Robert T. Miller (fa)	Feb.	16
(Turfgrass), A Ryegrass That Cuts Clean (fa)	Nov.	. 12
(GCSAA) (cr) Turfgrass Ice Rinks (ns)	Apr.	23
Turfgrass, Low Temperature Kill	Nov	14
Turfgrass Ice Rinks (ns) Turfgrass, Low Temperature Kill by James B. Beard (fa) (Turfgrass), Management Factors Affecting Sod Heating (fa) (Turfgrass), Ohio Conference, Fifth Annual Show and Tell (cr) Turfgrass Retardation With Chemicals	35	44
(Turfgrass), Ohio Conference, Fifth Annual	.mar.	44
Show and Tell (cr) Turfgrass Retardation With Chemicals	Jan.	. 24
by D. M. Elkins (fa) Turfgrass, Sulfur for by Dr. Fred V. Grau (ns) Turf Nutrition by William E. Knoop (fa) Turf Pest Control and The Environment (fa) Turf Safety of — Natural or Synthetic	May	18
Turf Nutrition by William E. Knoop (fa)	Feb.	14
Turf, Safety of — Natural or Synthetic	Oct	40
Turf, Safety of — Natural or Synthetic by John H. Hall (fa) Turf, Super Duals Protect, At Memory Gardens, by Michael Lillis (fa) Turf, The Search for Shade Tolerant (ns) Turf, You Can't Gamble With, Even In Las Vegas (ns) Turf, Zoysia Grass, Mel Anderson's Bold	Oct.	. 40
Gardens, by Michael Lillis (fa) Turf, The Search for Shade Tolerant (ns)	.Nov.	37
Turf, You Can't Gamble With, Even In Las Vegas (ns) Turf, Zoysia Grass, Mel Anderson's Bold	July	18
Experiment (fa)	Apr	. 28
II		
Ultraviolet Light Helps Decode Ryegrass Species		
Dr. C. Reed Funk, E. E. Hardin and		
Ultraviolet Light Helps Decode Ryegrass Species by Richard H. Bailey, Dr. Henry W. Indyk, Dr. C. Reed Funk, E. E. Hardin and C. R. Edwards (fa) Utah, Applicator Use Laws, Part II (fa) Utility View, The, Rights-of-Way Maintenance— The Future by Gordon Mundrane (fa)	May	36
Utility View, The, Rights-of-Way Maintenance — The Future by Gordon Mundrane (fa)	June	12

Vegetation Maintenance (fa)	Dec	. 12
Vegetation Maintenance (fa) Vermont, Applicator Use Laws, Part II (fa) Verticillum, Lab Seeks Solutions to Tree	Nov	. 36
Problems by Dr. Charles L. Wilson (fa)	Feb	. 44
Problems by Dr. Charles L. Wilson (fa) Virginia, Applicator Use Laws, Part II (fa) Virgin Island, Applicator Use Laws, Part II (fa)	Nov	. 36
W		
Washington, Applicator Use Laws, Part II (fa)	Nov.	36
Washington, Applicator Use Lawy, Part II (fa)	July	14
Weed Control, Aquatic Weed History by Julian J. Ravnes (fa)	July	12
Modern Biocides by Dr. Charles R. Walker (fa) Weed Control, Aquatic Weed History by Julian J. Raynes (fa) Weed Control, Chemical, Cuts Labor Costs In Half (fa) Weed Control, Chem-Trol, A Business With A	Mar	19
Theteres (fe)	Sont	20
Weed Control, Effect of, On The Environment	Sept	. 20
(Weed Control), Even In Las Vegas You Can't	Jan	. 14
(Weed Control Specialist), Southern Weed Science	July	7 18
Society Report, Silver Anniversary (cr)	Mar	. 30
	Sept	
Weed Control Western Style (fa)	Sept	. 11
Weed Control Western Style (fa) Weed Science, Industry's Role In by Dr. Glenn C. Klingman (fa)	Sept Sept Mar	. 11
Weed Control Western Style (fa) Weed Science, Industry's Role In by Dr. Glenn C. Klingman (fa) Weed Science Society, Southern, Report, Silver Anniversary (cr)	Sept Sept Mar	. 22
Weed Control Western Style (fa) Weed Science, Industry's Role In by Dr. Glenn C. Klingman (fa) Weed Science Society, Southern, Report, Silver Anniversary (cr) West Virginia, Applicator Use Laws, Part II (fa) What A Golf Course Should Be	Sept Sept Mar Mar Nov	. 11 . 22 . 30 . 36
Weed Control Western Style (fa) Weed Science, Industry's Role In by Dr. Glenn C. Klingman (fa) Weed Science Society, Southern, Report, Silver Anniversary (cr) West Virginia, Applicator Use Laws, Part II (fa) What A Golf Course Should Be by Richard M. Phelps (fa) Winter-Hardy Ornamentals. The Key is Year-Round	Sept Sept Mar Mar Nov	. 11 . 22 . 30 . 36 e 16
Weed Control, Effect of, On The Environment by W. A. Harvey (Weed Control), Even In Las Vegas You Can't Gamble With Turf (ns) (Weed Control) Specialist), Southern Weed Science Society Report, Silver Anniversary (cr) Weed Control, Victorious War on Brush Control (ns) Weed Control Western Style (fa) Weed Science, Industry's Role In by Dr. Glenn C. Klingman (fa) Weed Science Society, Southern, Report, Silver Anniversary (cr) West Virginia, Applicator Use Laws, Part II (fa) What A Golf Course Should Be by Richard M. Phelps (fa) Winter-Hardy Ornamentals, The Key is Year-Round Fertility (fa)	Sept Sept Mar Mar Nov June	. 11 . 22 . 30 . 36 e 16 . 26 . 36
Weed Control Western Style (fa) Weed Science, Industry's Role In by Dr. Glenn C. Klingman (fa) Weed Science Society, Southern, Report, Silver Anniversary (cr) West Virginia, Applicator Use Laws, Part II (fa) What A Golf Course Should Be by Richard M. Phelps (fa) Winter-Hardy Ornamentals, The Key is Year-Round Fertility (fa) Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa)	Mar Mar Nov June Apr Nov	. 11 . 22 . 30 . 36 e 16 . 36 . 36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-7.	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-Z Zovsin Crees, Mel Anderson's Pold Experiment (fa)	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-Z Zovsin Crees, Mel Anderson's Pold Experiment (fa)	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-Z Zovsin Crees, Mel Anderson's Pold Experiment (fa)	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-Z Zovsin Crees, Mel Anderson's Pold Experiment (fa)	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-Z Zovsin Crees, Mel Anderson's Pold Experiment (fa)	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-Z Zovsin Crees, Mel Anderson's Pold Experiment (fa)	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-Z Zovsin Crees, Mel Anderson's Pold Experiment (fa)	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-Z Zovsin Crees, Mel Anderson's Pold Experiment (fa)	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-Z Zovsin Crees, Mel Anderson's Pold Experiment (fa)	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-Z Zovsin Crees, Mel Anderson's Pold Experiment (fa)	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-Z Zovsin Crees, Mel Anderson's Pold Experiment (fa)	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-Z Zovsin Crees, Mel Anderson's Pold Experiment (fa)	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-Z Zovsin Crees, Mel Anderson's Pold Experiment (fa)	Nov	36
Wisconsin, Applicator Use Laws, Part II (fa) Wyoming, Applicator Use Laws, Part II (fa) X-Y-7.	Nov	36

	Issue	Pg.
Hardin, E. E., "Fluorescence In Ryegrass		
Certification"	May	28
Harvey, Hank F., Jr., "How to Select A Pro-Grade Chai Saw." "Power Saw Safety," "Why Power Saws Fail —		
and How to Avoid Trouble"	Sept	. 16
Harvey, W. A., "Effects of Weed Control		
On the Environment"	Jan	. 14
Hawkins, Robert, "Pros and Cons of Rolled or		
Palletized Sod	July	7 44
Hiltibran, Dr. Robert C., "Aquatic Herbicides"	July	7 26
Holbrook, C. C., "Herbicides Keep Jacksonville		
Drainage Ditches Open"	Mar	. 16
Holkenborg, Larry, "18 Steps to Safe Tree Climbing"	Aug	. 20
Indyk, Dr. Henry W., "Fluorescence As Related to		
Ryegrass Recommendations"	May	7 14
Kerr, Cecil F., "The Pesticide Future Is Brighter"	Mar	. 10
Klingman, Dr. Glenn C., "Industry's		
Role In Weed Science"	Mar	. 22
Knoop, William E., "Turf Nutrition"	Feb	
Lillis, Michael, "Super Duals Protect		
Turf At Memory Gardens"	Nov	. 37
Loft, Peter, "Bullish On Baron" With John Morrissey	Feb	

	Issue Pg.
Meyers, Vernon, "How We Reduced Drift With Aquatic Herbicides" Miller, Robert T., "Programmed Turf Disease Control" Morrissey, John, "Bullish On Baron" with Peter Loft Neeley, Dan, "Prognosis for the Wounded Tree" Mundrane, Gordon, "The Utility View, Rights-of-Way Maintenance — The Future" With	July 16 Feb. 16 Feb. 25 Aug. 16
Dr. Donald A. Spencer	June 12
Phelps, Richard M., "What A Golf Course Should Be" Raynes, Julian J., "Aquatic Weed History" Schmidt, Richard E., "A Sod Producer's Two Goals" Spencer, Dr. Donald A., "The Ecologist's View, Rights-of-Way Maintenance — The Future"	June 16 July 12 Jan. 31
with Gordon Mundrane	June 10
Tashnick, Tony, "Marketing Order Concept A Necessity for Sod Producers" Walker, Dr. Charles R., "Modern Biocides — A New	Nov. 30
Dimension to Water's Complex Environment"	July 14
Weber, Donald R., "Nozzles and Spray Systems"	Jan. 10
Wilson, Dr. Charles L., "Lab Seeks Solutions to Tree Problems"	Feb. 44

Tidewater And Metropolitan Shade Tree Conferences Discuss Benlate Fungicide



Program speakers included Walter E. Money, president, Guardian Tree Experts, (I) Dr. T. C. Ryker, product development manager, Du Pont Company, (center); and Dr. R. J. Stipes, plant pathologist, Virginia Polytechnic Institute, (r).

Mid-Atlantic commercial and municipal arborists, plus other interested shade tree people, participated in two conferences during November. The Tidewater Conference met at the Norfolk, Virginia, Botanical Gardens, while the Metropolitan Meeting was held in Arlington, Virginia.

At both metings, Dr. R. J. Stipes, plant pathologist, Virginia Polytechnic Institute, and Dr. T. C. Ryker, product development manager, E. I. DuPont de Nemours & Co. Inc., discussed the use of Benlate benomyl fungicide as an aid in the prevention and control of Dutch Elm Disease.

Dr. Stipes related his studies on soil injection of Benlate, which conclude that more field studies might point to an additional promising approach to systemic disease control.

Dr. Ryker discussed current labeling of Benlate for elms, together with the several trunk pressure injection procedures now under study. He emphasized that the only trunk injection method presently approved by the Environmental Protection Agency is the Mauget-type cup injection system. This system was demonstrated by Walter E. Money, President, Guardian Tree Experts, Inc., Rockville, Maryland.

Since data on Dutch Elm Disease control can only be evaluated each Spring from the previous season's work, Dr. Ryker reasons that it is unlikely that any other system will be available soon.

A question regarding small bark wounds resulting from trunk injections was posed to Dr. Alex Shigo, Chief Plant Pathologist, Forestry Experiment Station, Durham, New Hampshire. Dr. Shigo was speaking at the Metropolitan Conference on his extensive work in effects of wounding on trees.

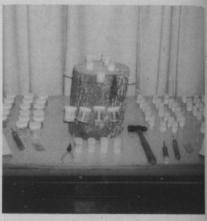
"While I have not worked on that question specifically," he said, "it appears that they would be somewhat like the wounds on sugar maples for syrup production. Sugar maples continue to do well and overcome these wounds. I feel that since the Mauget wounds are minute in comparison, there should be no problem."

Plant pathologists from the University of Wisconsin had previously reported in their "Benlate Seminar Booklet" that their extensive work with injection tubes on elms has resulted in no serious injury to date.

Persons interested in becoming dealers of Mauget products in the Washington, D. C. area are asked to attend a dealer's meeting to be held at the Marriott Twin Bridges Motor Hotel on Jan. 17 (adjacent to Washington National Airport at U.S. Route 1 and I-95).



Walt Money shows how easy it is to insert the Mauget cup into a tree trunk.



Injection equipment needed to combat Dutch Elm Disease.

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Annual Meeting: July 14-18, 1973, Radisson Hotel, Minneapolis, Minnesota.

Highlights of '72: Membership reached 1980 with the number of new member applications received reaching a new high.

In the area of legislation, AAN has presented testimony to both sides of the Hill on agricultural appropriations, Forest Service appropriations, wage-hour legislation, pesticide legislation, Washington Youth Gardens appropriations, highway legislation, and others. Among the outstanding victories for ANN were: obtained exemption from OSHA for growers; helped block efforts to amend wage-hour law to raise minimum wage and remove seasonal overtime exemptions for nursery employees; was instrumental in regaining exemption for nursery stock from wage-price controls under Phase II at retail and wholesale levels after the government reversed their initial de-

cision and declared nursery stock, along with many other agricultural products, covered under wage-price controls after the first sale. New face on the staff — Leo Donahue, retired Marine officer, who replaced Richard Turney as legislative liaison.

Other activities: AAN conducted highly successful and well attended Management Seminar at Syracuse University — first in 8 years. Among a long list of publications generated from the AAN offices in 1972 were: a comprehensive "Direct Mail Advertising Summary"; a new monthly news bulletin to supplement the AAN Newsletter; a consumer-oriented poster-pamphlet, "More Pleasure From Your Plantings;" a Washington Youth Gardens brochure; 1972 edition of annual "Guide to Effecive Advertising;" and "The Case for the Guilty Garden," an industry statement counteracting the misconceptions and misrepresentations about the supposed danger from "poisonous plants" an authoritative document sent to members and key opinion makers all over the country.

1972 Washington Convention highlights include the introduction of 1972 Yearbook of Agriculture, "Landscape for Living," by Secretary of Agriculture Earl L. Butz, and a reorganization of AAN Board of Governors, the governing body of the Association.

1972 saw phenomenal growth for all umbrella groups — National Landscape Association, Wholesale Nursery Growers of America, National Association of Plant Patent Owners, Horticultural Research Institute. HRI published the valuable "Uniform Chart of Accounts" and 1971 Operating Cost Study, and research has begun on, among other things, a project which will attempt to show that man is "genetically programmed" to require an environment of green, growing things. A new association was formed designed to meet the needs of the retail segment of the industry. Called Garden Centers of America, member services are scheduled to begin January 1, 1973.

Green Survival continues to grow with Canada, England, Germany, and Holland adopting similar programs. A Green Survival Theme Song has been created and plans are being made for a Green Survival film.

Perhaps the most exciting program developed this year is the Nursery Industry Cooperative Advertising Program, a national marketing program designed to provide growers and retailers with an opportunity to accomplish effective consumer advertising on a national scale at a realistic cost. An incisive NICAP advertising manual, "Partners in Profit," is being sent to all AAN members for their use.

Program Plans For '73 and Forecast: In brief, AAN will continue its major programming; NICAP will be perfected and new information distributed for the Manual; Landscape Awards Program will be stepped up; more Management Seminars planned; expansion of member services to AAN as well as to all umbrella groups; and aggressive activity by the Garden Centers of America. The AAN will intensify its legislative efforts because it must . . . in the face of increasing Federal intervention in business and the growing consumer movement. Also, a closer coordination is planned with the Forest Service and Agricultural Research Service in the area of agricultural research. All in all, the future and its potential look quite

DECEMBER 1972 75

good for the industry, the AAN and its related association groups.

AMERICAN SOCIETY OF CONSULTING ARBORISTS

12 Lakeview Avenue, Milltown, New Jersey 08850 Tel. (201) 821-8948

Dr. Spencer H. Davis, Jr., Executive Director.

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Annual Meeting: Feb. 15-17, Mountain Shadows Resort, Scottsdale, Arizona.

Highlights of '72: The program emphasized a study of tree evaluations as related to home, building and land appraisals and to land evaluations and eminent domain as presented by members of the American Institute of Real Estate Appraisers at the annual meeting. The Case History Committee completed the Field Report Form which is now available to members, and also enlarged its case history report filings. Members received current technical information on the effect of natural gas on trees and vegetation — it does kill trees! Advertising in national journals and trade papers was increased.

Program for '73: (1) Annual meeting will entertain papers and discussions by members of the American Institute of Landscape Architects, the Associated Landscape Contractors of America, the Society of American Foresters, and the Association of Consulting Foresters. Discussions will attempt to correlate activities of the ASCA with these other associations. (2) Information via speakers at the annual meetings and mailings to members will attempt to enhance their abilitics as court witnesses involving cases dealing with trees.

AMERICAN SOD PRODUCERS ASSOCIATION

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Blue Grass Sod Farms, Inc., Hudsonville, Mich.; and Gerry Brouwer, Brouwer Sod Farms Ltd., Keswick, Ontario, Canada.

Annual Meeting: July 16-19, Holiday Inn, Denver, Colorado. Equipment Field Day at Richlawn Turf Farms — Host organization will be Rocky Mountain Sod Growers Association.

Highlights of '72: An outstanding summer meeting in Toronto, Canada hosted by the Nursery Sod Growers of Ontario. Exceptionally well organized and interesting tours of the sod industry in Ontario were conducted. Activities were concluded with a half-day field demonstration of sod harvesting equipment. National Guideline Specifications For Sodding were printed and received widescale distribution in response to requests from a wide range of turfgrass interests. An accounting system for sod producers was developed and will be made available.

Program for '73: Winter Meeting — February 18-24, incl. in Hawaii. Program will consist of a seminar on the topic of financial management to be presented by a recognized authority of finances. In addition, several organized tours are scheduled.

Forecast for '73: A strong demand for sod should continue throughout '73 if the encouraging economic forecasts come true. Increasing supplies of sod will adequately satisfy the strong demand. Price should remain about the same and possibly tend to be depressed with the development of surpluses. This will be a definite unhealthy development in the industry. With rising costs of production which are not being reflected in the sale price, the net return margin becomes dangerously low. It will become increasing important to become more efficient in production. Furthermore, it is imperative for an individual sod operation to survive to adopt a record keeping and accounting system that will provide a financial analysis of the operation. Better business management presently is a major need in the sod industry. The development of an accounting system for sod producers by the ASPA should prove to be an invaluable contribution of the Association to the future of the sod industry.

GOLF COURSE SUPERINTENDENTS ASSOCIATION OF AMERICA

3158 Des Plaines Ave., Des Plaines, Ill. 60018 Tel. (312) 824-6147

Conrad L. Scheetz, Executive Director

Officers and Directors for '72: Robert V. Mitchell, pres.; Portage CC, Akron, Ohio Clifford A. Wagoner, vice-pres., Del Rio G & CC, Modesto, Calif.; Charles G. Baskin, sec-treas, CC of Waterbury, Waterbury, Conn.; Richard C. Blake, presemeritus, Mt. Pleasant CC, Boylston, Mass.; Palmer Maples, director, The Standard Club, Atlanta, Ga.; Richard W. Malpass, director, Riverside G & CC, Portland, Ore.; Paul E. Mechling, director, Sylvania CC, Sylvania, Ohio; Theodore W. Woehrle, director, Oakland Hill CC, Birmingham, Mich.; Carleton E. Gipson, director, Elkins Lake GC, Conroe, Tex. Officers and directors will change in January 1973.

Annual Meeting: Jan. 7-12, 1973, John B. Hynes

Civic Auditorum and Sheraton-Boston Hotel, Boston, Mass.

Highlights of '72: Four seminars were conducted. In addition, attendance at the annual International Turfgrass Conference and Show broke previous records. A new executive director was named to fill the vacancy left by Ben J. Chlevin. A decision was made to move the executive head-quarters of the association to Lawrence, Kansas in the summer of 1973.

Program for '73: The second series of seminars will be instituted in the spring. This series will be on pesticides. The third series of seminars will involve the Operational Safety and Health Act of 1970.

Forecast for '73: The immediate goal is to integrate the forces at hand and organize the association under the management of the new executive director. Once a solid foundation is formed, the association will initiate new programs which include a membership drive, insurance program and a continuing educational program.

HYACINTH CONTROL SOCIETY, INC.

P. O. Box 508, Floral City, Fla. 32636

T. Wayne Miller, Jr., Secretary

Officers and Directors for '73: Brandt G. Watson, pres., Naples Mosquito Control District, Naples, Fla.; Dr. Alva P. Burkhalter, first vice-pres., Dept. of Natural Resources, Tallahassee, Fla.; Ray A. Spirnock, second vice-pres., Central & Southern Fla. Flood Control District, Miami, Fla.; Robert J. Gates, immediate past pres., SW Florida Water Management District, New Port Richey, Fla.; Dr. Robert W. Geiger, treas., The 2M Company, Pompano Beach, Fla.; Dr. David L. Sutton, editor, USDA, Fort Lauderdale, Fla.; T. Wayne Miller, sec., Lee County Hyacinth Control District, Fort Myers, Fla. C. Brate Bryant, Aquamarine Corp., Waukesha, Wisc.; Fred E. Downings, Citrus County Weed Control, Lecanto, Fla.; Herbert J. Friedman Southern Mill Creek Products Co., Tampa Fla.; L. V. Guerra, Texas Parks & Wildlife Department, San Antonio, Tex.; W. L. McClintock, City of Winter Park, Winter Park, Fla.; William E. Thompson, U.S. Army Corps of Engineers, Metairie, La.

Annual Meeeting: July 15-18, Monteleon, Hotel, New Oreleans, La.

Highlights of '72: The name of the society did not change. The membership voted for a possible name change by mail ballot, but it was defeated at the annual business metting. Release of a water hyacinth weevil in August was the first attempt to control this noxious aquatic plant with insects. The weevil is native to South America and is host specific. The White Amur has also been released in six isolated and tightly guarded ponds in various parts of Florida. Work is continuing in physiological and microbiological investigations to bring the aquatic weeds under control. Dr. Robert D. Blackburn, USDA, Ft. Lauderdale, Fla. has identified hydrilla in a pond in Iowa, near the Mississippi River. The growth of this weed

will be monitored throughout the coming year.

Program for '73: To license all persons, firms or corporations conducting aquatic plant control in public waters in the State of Florida under the new law that became effective Oct. 20, 1972.

Forecast for '73: The annual meeting will be held outside the State of Florida. This should be an excellent opportunity to witness the aquatic vegetation problems in another state. Program committee chairman, Dr. Alva Burkhalter, is planing a program for the meeting that includes progress reports in research projects and applied weed control work.

INTERNATIONAL PESTICIDE APPLICATORS ASSOCIATION, INC.

5600 SW Rosewood St., Lake Oswego, Oregon 97034

L. F. (Lew) Sefton, Executive Secretary

Officers and Directors for '73: Don Mock, pres., Shamrock Spray Service, Seattle, Wash.; Bob Huntwork, vice-pres., J Spray Corp., Concord, Calif.; Ken Thorpe, recording sec., General Spray Service, West Linn, Ore.; Lew Sefton, Treas., Sefton Spray Service, Lake Oswego, Ore.; Directors: Bob Skanes, Crothers Spray Service, Tacoma, Wash; George Harrison, Washington Tree Service, Seattle, Wash.; Jack Daniels, Greenup Spray Service, Seattle, Wash.; Lew Crothers, Crothers Spray Service, Tacoma, Wash.; Stan Raplee, Washington Tree Service, Seattle, Wash.; Rod Fairbanks, Fairbanks Spray Service, Seattle, Wash.; Mac Osborn, Osborn Spraying Service, Danville, Calif.; Alvin Wallman, Sonoma Val. Weed Control, Sonoma, Calif. Jim Stevenson, Steve's Pest Control, Oakland, Calif.; Stan Taylor, Unedus Pest Control, Los Gatos, Calif.; W. R. Nahmens Enterprises, Menlo Park, Calif.; Charles Seibold, Major Spray Service, Portland, Ore.; Bill Owen, General Spray Service, Clackamas, Ore; Steve Fisher, Paramount Pest Control, Portland, Ore.; Gary Mulkey, Mulkey's Spray & Tree Service, Junction City, Ore.; Ray Collier, Collier Spray Service Portland, Ore.; Don Caldwell, Utah Spraying Service, Salt Lake City, Utah.

Annual Meeting: August 15-18, 1973, Marriott Inn, Berkeley Marina, Berkeley, California 94710, Tel. (415) 548-7920

Highlights of '72: The transition from the only Regional Pesticide Applicator Association to the only representative National Organization is the prime accomplishment. As of this writing there are three chapters, located in Washington, Oregon and California. Organization is in progress for chapters in southern California and New York. Besides Chapter Members, there are currently Members at Large in Colorado, Florida, Idaho, Iowa, Kentucky, New Jersey, New York and Utah. Inquiries from other states, Canada and India are in the mill. This is a going concern.

In April 1972, IPAA started publishing a monthly paper, The Professional Applicator. This has been well received and seems a worthy vehicle for

gluing together the scattered applicators interested in themselves and their industry. A part time arrangement was made for an executive secretary. This, with the certain growth nationally, will lead to the hiring of a full time person soon. Because of the original application by IPAA for a review of the DDT issue by an advisory committee and a request for a public hearing, the end of 1972 may see the only live DDT label in the U.S. in the possession of an IPAA Associate Member, Crop King Chemical of Yakima, Wash. The original association request was filed through Crop King Crop King this past year assumed all remaining financial responsibility, a burden off our organization. This is a separate action from that of the infamous Ruckelshaus decision. The Washington Chapter has still not lost the DDT fight in its State and is seeking registration for root weevil

IPAA adopted an emergency action resolution in 1972. As a condition of membership, each chapter pledges mutual aid to and by its members in cases of distress due to sickness or injury. Other benefits are in the mill.

Program for '73: (1) The Convention is moved up to August to allow for a family vacation while attending. (2) It will be hosted by the new California Chapter. This shows how rapidly applicators, hungry for association, can effectively organize. (3) Continued education, and the improvement of our industry through organized effort. (4) Education of the public that the truly safe and efficient way is with the licensed professional applicator.

Goal: Our enlargement into an international association capable of promoting our programs on an ever increasing front. We must make it cur business that the public is never so mistakenly brainwashed again.

Forcast for '73: The pendulum has started its return stroke. Little by little the public will learn that it is the pesticide applicator who preserves the environment for them and makes a better habitat for wildlife. International Pesticide Applicators Association, Inc. will lead the way.

INTERNATIONAL SHADE TREE CONFERENCE, INC.

3 Lincoln Square P. O. Box 71, Urbana, Illinois 61801 Tel. (217) 328-2032

E. C. (Cal) Bundy, Executive Secretary

Officers and Directors for '73: Dr. John A. Weidhaas, Jr., pres., Va. Poly Tech. Institute, Blacksburg, Va.; F. Lewis Dinsmore, pres. elect, Dinsmore Tree Service, St. Louis, Mo.; John Z. Duling, vice-pres., Duling Tree Expert Co., Muncie, Ind.; Dr. E. B. Himelick, exec. director, Ill. Natural History Survey, Urbana, Ill.; Dr. Dan Neely, editor, Ill. Natural History Surver, Urbana, Ill.

Annual Meeting: August 12-16, 1973, Sheraton Boston Hotel, Boston, Mass. Regional Chapter annual meetings: Ohio Chapter, January 21-25, Sheraton-Columbus Hotel, Columbus, Ohio; Penn-Del Chapter, January 25-26, Marriott Motel, Philadelphia, Pa.; Midwestern Chapter, February

6-8, Holiday Inn, 1926 W. Wisconsin Ave., Milwaukee, Wisc.; Southern Chapter, February 25-28, Sheraton Motor Inn, Fredericksburg, Va.; Western Chapter, June 17-20, Hotel Utah, Salt Lake City, Utah; Canada, April 5-6, Place Bonaventure, Montreal.

Highlights of 1972: Membership increase is continuing. I.S.T.C. processed more new individual members during 1972 than any previous year. Sustaining memberships of commercial firms and related associations is on the upswing. Southern California members staged a highly successful 1972 annual convention last August at Newport Beach, Calif. The attendance of 764 delegates consisted of members from all parts of the United States and Canada. The unique outdoor exhibitor area contained a record number of fifty commercial exhibits. Submitted the fourth and final research grant payment of \$4000 to the University of Wisconsin in support of the project titled "Effects of Transplanting on Physiological Responses and Growth of Shade Trees," under the direction of Dr. T. T. Kozlowski. The revised publication "A Standard Municipal Tree Ordinance" was printed and released. Requests have almost depleted the initial printing.

Program for '73: Will continue to encourage the establishment of an annual observance of National Arbor Day by the Federal government. Will select a future research project at an educational institution. Recipient will receive the I.S.T.C. Research Assistantship Grant. Will complete the revised edition of our publication entitled "Transplanting of Trees and Shrubs." Will begin making plans to observe the 50th anniversary of the I.S.T.C. at the 1974 annual convention in Atlanta, Ga. Will continue the dessemination of knowledge in the science and art of growing and maintaining shade and ornamental trees via our monthly and annual publications, and our regional and international meetings.

Forecast for '73: Few laws have produced as many aftershocks as the Occupational Safety and Health Act of 1970. Some think that it places too much responsibility on the employer and does not take into consideration the employee attitude. This Act will continue to have a great effect on the industry during 1973. The Urban Forestry Program of the U.S. Forest Service, when fully implemented and directed towards shade and ornamental tree problems of the cities, towns, villages and countries, will initiate more work for the qualified arborists. The professional arborist will benefit from increased research work and educational activity at the Federal and state levels.

NATIONAL ARBORIST ASSOCIATION

1750 Old Meadow Road McLean, Virginia 22101 Tel. (703) 893-7347 Robert C. LaGasse, Executive Secretary

Officers and Directors for 1972: Robert Felix, President, Harder Services, Inc., Hempstead, New York; John A. Shullenbarger, 1st Vice-President, Gustin Gardens Tree Service, Inc., Gaithersburg, Maryland; W. Roland Shannon, 2nd Vice-President, Shannon Tree Company, Milford, Pennsylvania; Paul Ramsey, Secretary, N. G. Gilbert (continued on page 86)

EDITORIAL (from page 9)

in developing noise abatement programs. This may be fine for big industry, but for a fewer than 15 man operation the services of this type of person is not economic.

The study also suggests operating only one piece of noise making equipment at a time, substituting belt drives for gears, dampening vibration, installing flexible mounts for motors, hoses or couplings, isolating the noise source and a host of other controls. If this fails, as it will most likely will in the case of chain saws and chippers, then the last alternative is to establish administrative controls. These would arrange work schedules for employees, rotate employees around the noise source, divide the work among several workers, and shut equipment down when the upper limit of duration for a high noise level is reached.

We submit that now is the time to be acting on this proposed study. The evidence in favor of adopting it is supported by data that leaves little to be questioned. We predict adoption of the study by OSHA. A word to the wise is sufficient.



Officers who will serve the Central Plains Turfgrass Foundation for the coming year are Larry Runyon, Kansas City, Mo., vice president (at left); Dr. Ray Keen, Kansas State University, secretary-treasurer (standing); and Edmer Easley, Wichita, president. Both Keen and Easley were reelected at the annual meeting, which was held in conjunction with the annual KSU turfgrass conference.

insect report

INSECTS OF ORNAMENTALS

CONIFER APHID

(Cinara canadensis)

VIRGINIA: Taken on juniper in Montgomery County July 6, 1972. This is a new State record

CRAPEMYRTLE APHID

(Tinocallis kahawaluokalani)

MARYLAND: Very heavy and injurious to plant at Baltimore. Population included males, oviparous females, new eggs and viviparous females. Sexual forms rare.

CERAMBYCID BEETLE

(Leiopus variegatus)

NEW JERSEY: All stages very heavy under bark of large mimosa tree on property in Haddonfield, Camden County in June 1972. Mimosa so badly weakened by several years of frequent defoliation by *Homadaula anisocentra* (mimosa webworm) that tree was cut down. L. variegatus found when bark stripped from tree. This is a new State record. Leaves because the county is many varies. State record. Larvae are known to occur in many varieties of hardwood. It is not known if this cerambycid has been found in mimosa previously.

TREE INSECTS

WHITE PINE APHID

(Cinara strobi)

SOUTH CAROLINA: Populations increased in white pine plantations in Piedmont area.

ELM LEAF BEETLE

(Pyrrhalta luteola)

NEW MEXICO: Damage heavy to Siberian elms at Farmington, San Juan County.

SOUTHERN PINE BEETLE

(Dendroctonus frontalis)

NORTH CAROLINA: Increased over Tusquittee Ranger District in Cherokee and Clay Counties. Population expanding rapidly. Survey revealed 60+ newspot infestations. Also problem in Randolph, Surry, Davie, Davidson, and Stanley Counties. ALABAMA: Established infestation killed 100+ Virginia pines along main highway near top of Cheaha Mountain State Park in Cleburne County. Recently emerged adults seen.

VARIABLE OAKLEAF CATERPILLAR

(Heterocampa manteo)

OKLAHOMA: Heavy infestation on oaks in Bryan County declined. Fully grown larvae left trees in Payne County. ARKANSAS: Specimens submitted from Benton County. Much lighter in northwest area than farther south. Attacked by diseases and parasites in most areas. WEST VIRGINIA: Larval damage heavy on about 300 acres of scattered red and black oaks in Hardy County.

TORTRICID MOTH

(Archips semiferanus)

PENNSYLVANIA: Outbreak of past 6 years declining. Defoliation, over 1 million acres previous 2 years, decreased to 610,000 acres in 1972 Timber loss heaviest in State for many decades. Entire forests killed over large areas of Clearfield, Centre, Clinton, and Lycoming Counties.

OBSCURE SCALE

(Melanaspis obscura)

KANSAS: Heavy on bur oaks near Wichita, Sedgwick County. Overwintering nymphs averaged 400+ per square inch, many twigs and branches dead.

PINE NEEDLE SHEATMINER

(Zelleria haimbachi)

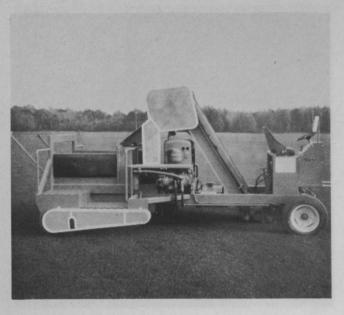
CALIFORNIA: Scattered infestations damaged ponderosa pines on Klamath National Forest in Humbug drainage area. Some of better plantations affected. Active in Shasta-Trinity National Forest. Infestations to be checked in spring 1973 after new growth appears.

BENEFICIAL INSECTS

AN ENCYRTID WASP

(Ooencyrtus kuwanai)

RHODE ISLAND: Released 60,000 against Porthetria dispar (gypsy moth) eggs in Providence County October 3. OHIO: Total of 10,000 specimens of this egg parasite of Porthetria dispar (gypsy moth) released in immediate area of Auglaize County where male moth previously trapped.



SOD HARVESTER: Princeton Manufacturing Co., Canal Winchester, Ohio

Model 4020 is a re-design of the former Princeton Model 180. It cuts slabs of sod 20 inches wide by 40 inches long and loads 50 yards per pallet on its self-contained forklift. This harvester is designed to produce 1500 yards of palletized sod per hour with a three man crew. Machine is powered by a 172 c.i. Ford industrial engine with full hydrostatic drive. Other features include standardized locally available parts, improved hydraulics and safety guarding. For more details, circle (701) on the reply card.



72 INCH ROTARY CUTTER: Massey-Ferguson Inc., Des Moines, Iowa

Here's a low-cost, 72 inch rotary cutter designed for average use where a heavy-duty cutter is not needed. The MF 68 has a solid, tire carcass tailwheel as standard equipment. Brush Hopper blade holder is also standard, as if floating top link which permits the tailwheel to rise without putting additional stress on the hitch. The gearbox is shock resistant malleable iron, packed with lifetime lubricant. Side skids are $42\frac{1}{2}$ inches long for added endurance. Tailwheel boom is adjustable in $1\frac{1}{4}$ inch increments. For more details, circle (703) on the reply card.



BLADE EQUIPPED LOADER: Waldon, Inc., Fairview, Okla.

A three-pin front boom mount holds this six foot wide dozer blade securely to the powerful, all hydraulic, 4-wheel drive tractor. No need to angle the blade because you steer it where you want it to go with the hinged tractor chassis, which articulates and oscillates to work in extremely close quarters. This arrangement, with power steering, not only gives tight turns, but also keeps all four wheels in full traction over rough terrain, curbs, debris, etc. On the boom, the dozer blade is raised, lowered or tilted by hydraulic control from the seat. The Waldon 5000 Dozer comes with a choice of seven engines. Standard features include 4-wheel hydraulic brakes, neutral-stop safety controls, gauges to monitor all vital functions and power steering. For more details, circle (702) on the reply card.



HAND-HELD CONCRETE BREAKER: Charles Machine Works, Inc., Perry, Okla.

This all-hydraulic breaker eliminated the two main causes of excessive noise usually associated with jackhammers—the roaring compresser and explosive release of compressed air. Quick-couple hydraulic connections attach the tool to Ditch Witch models H12, J20, V30, R40, R60 and R65 trenchers and VP12 vibratory plow. The power input to the breaker is approximately 8 hp. The hydraulic recoil system lets the unit take the shock, not the operator. For more details, circle (704) on the reply card.