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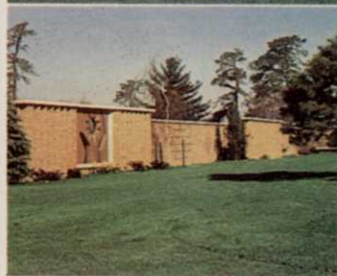
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Red Maple has adapted to regional growing conditions from Florida to northern Michigan.



FURTHER EXPLORATION IS NEEDED TO GET MORE OUT OF NATIVE PLANTS

By DOUGLAS CHAPMAN

Plant exploration is one way to add diversity to the landscape. When one mentions plant exploration, Japan, China, Russia, and Poland first come to mind, but plant exploration in our country, stressing the factors of provenance and site adaption, is another way for American horticulture to develop its own distinct mark. We recommend selecting native plants from geographic regions, to be planted in those regions, e.g. Great Lakes, Northeast, Southeast, etc. By se-

lecting outstanding natives, we are taking advantage of provenance, or regional adaption, and unique site adaption, e.g. a hickory that grows in the flood plain as well as upland fertile soils. What precedent is there for this type of development?

Dr. Fred Meyer, of the National Arboretum, recently stressed the outstanding development of Japa-

Continued on page 94

Douglas Chapman is horticulturist for Dow Gardens, Midland, Michigan.



Bill Schader
Ranch Manager
AmFac Garden Cal-Turf; Camarillo, CA



Rankings from turf trials throughout the United States:

Kentucky Bluegrasses (1 = best)	Rutgers University 23 entries seeded—1978 data—1977-79 (3 yr. average)	Ohio State University 40 entries seeded—1978 data—1980	University of Illinois 20 entries seeded—1978 data—1980	Kansas State University 45 entries seeded—1979 data—1980	Camarillo California 25 entries seeded—1977 data—1978	University of Idaho 62 entries seeded—1979 data—1980
Columbia	2	3	1	13	2	6
Midnight	*	1	3	13	*	1
Baron	14	39	12	23	13	27
Adelphi	1	36	2	16	4	4
Victa	20	38	*	15	*	9
Touchdown	3	18	18	7	14	46
Merion	19	34	20	*	18	12

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Underground, Columbia produces a quick spreading rhizome system that allows sod to be harvested earlier. A good root system is important to turf health in hot, dry summer periods. Columbia's Fusarium Blight resistance makes it a perennial winning turf-type "blue".

The Rewards of Research...

These test plots at Camarillo, California, proved Columbia Kentucky Bluegrass was best suited to this area. Fusarium and rust damaged Baron, Victa, Glade, Park and Touchdown while Columbia rated second only to the experimental CHB-11A. As a result, Columbia was chosen as a vital part of the mixtures used in southern California sod.



nese horticulture. The one thing highlighting Japanese horticulture is the fact it developed internally from native plants for 1,000 years. They select, breed, and landscape their gardens with plants native to Japan. They rarely explored outside of the Japanese islands, while developing the best, by yet improving on what they had.

Certainly as we look across this country, we see the marks of English and, now the mark of, Japanese horticulture. It is possible that the main legacy that Japanese horticulture should give to American horticulture is to develop our native plants to the fullest.

Regional adaption of trees is certainly one of the main considerations in selecting and developing native trees, or regional cultivars. Rehder and Wyman suggest, the native range of *Acer rubrum* (Red Maple) is from northern Michigan to Florida, but a northern Florida Red Maple would not survive in Michigan. Conversely, a northern

Michigan Red Maple would not thrive in Florida.

Provenance manifests itself not only in adaption but some unique physiological responses, e.g. photoperiodic effects on growth. Hanover at Michigan State University has shown clearly that plants native to northern climates are more photoperiodic responsive than those native to southern areas.

One of the most useful characteristics of this adaption would be juvenile northern Red Maple grown under continuous light will remain continuously vegetative, reaching 5 feet from 6 inch cuttings in one season. The same phenomenon is not as pronounced in southern Red Maple.

Further, provenance affects winter hardiness in northern areas and heat tolerance for southern natives. When selecting and developing cultivars for the Great Lakes Region, a line can be drawn from Columbus, Ohio (east and west), north of that line, the plants would be hardy throughout much of the

Great Lakes, and natives south of that line would show adaption to the south-central and southeastern areas.

Site adaption, or, if you will, adaption to micro-climate, is a further reason for plant selection. Horticulturists have noted that Sugar Maples thriving in fertile, well-drained soils and an ecotype that thrives growing at edges of swampy areas or flood plains. This adaption to soil conditions is a real opportunity for nurserymen and horticulturists, alike, to select plants that will tolerate urban conditions. Certainly many of us have observed Red Maples growing in flood plains, also upland soils.

One must be continually alert to this condition or other variations from the norm. In the mid-Michigan area alone, we have observed *Carya ovata* (Shagbark Hickory) growing in traditional soils and in swamps or flood plains where, in fact, their root system is in water 4 to 6 months of the year. Also observed are Red Maple growing on sand hills and swamps and Sugar Maple, or its sub species, growing in heavy soils, as well as the traditional well-drained fertile sites.

It is paramount to select trees for site adaption while looking for trees that have outstanding aesthetic characteristics, such as scarlet or yellow fall color, columnar habit of growth.

Further, tolerance to insects; Crab Apple - aphid; Hackberry - nipple gall; and disease resistance, e.g. Crab Apple - fire blight and apple scab; Hackberry - witches broom; Sycamore - anthracnose. This resistance or tolerance may give us an opportunity to satisfy low maintenance needs while adding diversity to the landscape.

These are only food for thought, but by utilizing native trees that prove to be "spartans" or grown under urban conditions while showing resistance to pest problems, it gives us one way to cut maintenance costs. Further, by developing regional cultivars of native trees and shrubs, we strengthen local nurserymen while adding diversity to the plants available for the landscape.

WTT

Several characteristics for cultivars of native trees worth observing include:

White Ash (*Fraxinus americana*) drought tolerance

Northern Red Oak (*Quercus rubra*) some salt tolerance oak wilt resistance

Red Maple (*Acer rubrum*) droughty soil tolerance

Bur Oak (*Quercus macrocarpa*) droughty soil tolerance

Russian Olive (*Elaeagnus angustifolia*) Fusicoccum elaeagni canker resistance

Hackberry (*Celtis occidentalis*) nipple gall resistance

Yew (*Taxus*) resistance to scales or black vine weevil

Rhododendron (*Rhododendron*) resistance to Phytophthora

White Birch (*Betula papyrifera*) resistance to birch leaf miner and or borer.

INTERIOR

Indoor plant population increasing

Households that keep indoor plants have increased the average number of plants in each home 120% since 1975, according to a Phillipps Products Survey. The average number of houseplants in a home is now 21, up from 10 in 1975, although the percentage of households that actually keep plants has gone down from 81% to 76%.

Interior gardeners are not only caring for more plants, but over half of those polled expected to increase the number of plants in their homes in the future. The other 46% planned to keep the same number.

The most popular type of planter, according to the survey, is not plastic. Plastic, which was preferred in the 1975 poll, dropped to 33%, versus 36% for clay. The remainder was divided between among ceramic, wood, wicker, glass and metal.

NURSERY

PNA names Saia acting director

The Pennsylvania Nurserymen's Association has appointed Charles V. Saia as the acting executive director. He was previously the PNA field administrator and director of member services.

A native of Johnstown, he now lives in a suburb of Harrisburg. Prior to joining the PNA staff, Saia was a general manager and comptroller of a Harrisburg country club.



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NEW— QuickJet™ Nozzle Assemblies

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NEW— Model 146 DirectoValve

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PRODUCTS

Hole borer pushes its way under roads

General Equipment has added the Hole-Mole M210 compaction type rod pusher/puller to its line of portable earth boring equipment. The Hole

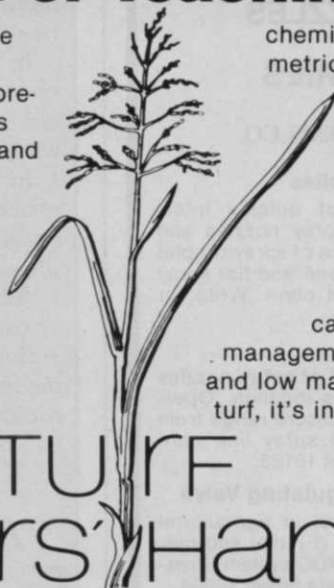


Mole is designed to install pipe up to 8-in. in diameter under streets, roadbeds and other obstructions that cannot

Finally, An Aid For Teaching Turfgrass

Superintendents, Contractors, Lawn Care Managers, New, On-the-Job Reference. The Turf Managers' Handbook is a comprehensive, organized approach to turfgrass science and care. It has been designed and written by leading turf specialists from Purdue, Dr. William Daniel and Dr. Ray Freeborg, for on-the-job reference and as a text for students.

The book contains 150 illustrations and 96 color photographs. Data includes 240 tables and forms. Included are specifications for rootzones, employment, calculations for



chemical applications, and extensive metric-imperial conversion. Business

and technical aspects of turfgrass management are covered in this 424-page book. Planning, purchasing, hiring, construction, and plant selection are put together for easy on-the-job reference.

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WTT 92

be serviced by usual trenching and plowing. The push/pull process pushes steel rods under an obstruction to a target trench where the service is to be installed and then retrieves the rods. The Hole-Mole works with any hydraulic system capable of delivering 5 to 20 gpm and 1500 to 2500 psi.

Circle No. 155 on Reader Inquiry Card

Myers pump offers high psi flexibility

The new BX6-12 high-pressure pump can be used for a wide range of applications. Weighing only 50 lbs., the unit can pump up to 8 gallons-per-minute at



up to 1,200 psi. The cast iron body features a Lexan window to check the lubricating oil and the crankshaft.

Circle No. 156 on Reader Inquiry Card

Royal Coach controls now have dual starts

Royal Coach/Buckner is producing all of its commercial and industrial solid state/electro-mechanical 12 station controllers with dual day and dual time starts. The model 34112 has two complete schedules that can be programmed for 14 different days each and different start times each day. Once programmed the schedules can be operated independently or together

and completely revised in only a few minutes. The 34112 features solid state station timing from 0-60 minutes and a check switch. Easily installed, the pedestal is complete with all instructions and hardware for mounting.

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Olympic is dark, low tall fescue

Turf-Seed Inc. is marketing a leafy, moderately low-growing tall fescue

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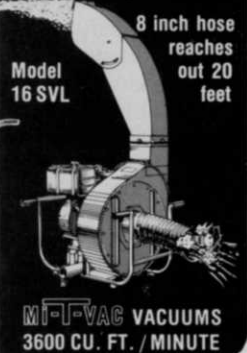
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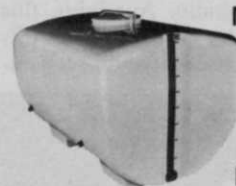
Model PCR300



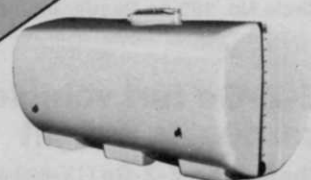
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called Olympic. Co-developed by Pure-Seed Testing, Inc., and Rutgers University, Olympic has "a moderately dark green color." The new tall fescue displays improved resistance to leaf spot, brown patch, and crown rust. Emergence takes place in 6-10 days when seeded in late spring or early fall. It can be sown with Kentucky bluegrass to improve drought, heat and wear tolerance.

Circle No. 158 on Reader Inquiry Card

Growth regulator has expanded label

Maag, Inc., has announced Atrinal now includes use for abelia, eugenia, ficus, pittosporum, in addition to current species ivy, ligustrum, holly, and honeysuckle. The plants are cleared for Atrinal for landscape maintenance use. The product is also labelled for many nursery and greenhouse applications.

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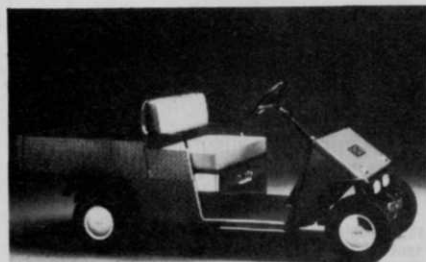
Finn redesigns B250 straw blower

Finn Corporation has totally redesigned its B250 blower to increase the capacity to blow low grade, tough hay or other vegetative mulch. The unit has a capacity of 25-ton-per-hour capacity with variable speed control. It is powered by a choice of six-cylinder diesel or gasoline engines.

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E-Z-Go turf vehicle carries its weight

The 800-lbs. E-Z-Go GX-800 is a multi-use light turf vehicle. Available this month at distributors the unit has a tilting bed with a capacity of almost ten cu-



bic feet, a zinc-oxide plating on the body to reduce rusting and chipping, and a 244 cc oil-injected engine with electronic ignition.

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Stumps cut deeper, wider by new Rayco

Rayco has a new stump cutter, the RG 1637, designed for greater production and field life. The unit has a heavy duty power unit to produce a deeper and wider cut into the stump, a 48-in.



telescoping cylinder to expand the

working area without repositioning the towing vehicle, and cutting depth capacity increase to 18-in. below grade and super grip notch v-belts to minimize possible slippage of the drive train.

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Rear vacuum added to Excel Hustler

Excel Industries now has available a vacuum attachment for its Model 261 outfront rotary mower. Designed for grass clippings and leaves, the Bac-Vac uses a 5-h.p. Briggs & Stratton engine for picking up 16 bushels of material at a time. To empty, the operator releases the contents by a lever as he drives forward.

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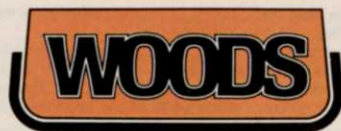
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You've read about this new system in "Golf Course Management" and "Golf" magazines. The *Sentinel Swan Family System* makes the geese fly over, not fly down. Eliminates nasty geese problems — unhealthy droppings, packed mower rollers, feather-clogged irrigation suction strainers, dead turf, time-consuming cleanup, and golfer complaints.

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by Dr. L.C. Truman
Dr. G.W. Bennett and
Dr. W.L. Butts

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EVENTS

The current issue of **WEEDS TREES & TURF** carries meeting dates beginning with the following month. To insure that your event is included, please forward it, 90 days in advance, to: **WEEDS TREES & TURF Events**, 757 Third Ave., New York, NY 10017.

National Lawn and Garden Distributors Annual Convention, Fairmont Tower, San Francisco, CA, **Sept. 12-15**. Contact Nancy Irving 1900 Arch St. Philadelphia, PA, 215/564-3484.

Virginia Turfgrass Research Field Days, Virginia Tech, Blacksburg, VA, **Sept. 14-16**. Contact J.R. Hall, Agronomy Dept. Blacksburg, VA 24061, 703/961-5797.

Understanding Weeds (A Practical Course on the Biology of Weeds) Purdue University, West Lafayette, IN, **Sept. 12-17**. Contact G.F. Warren, 1130 Cherry Lane, West Lafayette, IN 47906, 317/463-1130.

Texas Turfgrass Field Day, Texas A&M Field Laboratory, **September 22**. Contact Dr. James Beard, Department of Soil and Crop Sciences, Texas A&M University College Station, TX 77843, 713/845-3041.

Northwest Turfgrass Conference, Washington Conference Center, Yakima, WA, **Sept. 20-23**. Contact Roy Goss, Washington State University, Puyallup, WA 98371, 206/593-8513.

Midwest Turf Field Days, Purdue University, West Lafayette, IN, **Sept. 27-28**. Contact W.H. Daniel, Dept. of Agronomy, Purdue University, West Lafayette, IN 47907, 317/494-4785.

International Pesticide Applicators Association Annual Convention, Holiday Inn, Seattle, WA, **Sept. 29-Oct. 1**. Contact Pete Tovoli 4202-11th NW, Puyallup, WA 98371, 206/848-3407.

Golf Course Superintendents Association of New Jersey Annual Turfgrass Equipment, Irrigation and Supplies Field Day, Rutgers University, **Oct. 5**. Contact Dr. Henry Indyk, Soils and Crops Department, Cook College Rutgers University, Box 231, New Brunswick, NJ 08903, 201/932-9453.