

you have holed out your putt on the 18th green.

Says Eric Siefert, Park Superintendent, "In the last 10 years our five 18-hole courses averaged about 320,000 rounds a year—last year 340,000 rounds were played. Because of space limitations there are no plans for expansion."

Green fees for 18 holes at Bethpage are \$2.50 weekdays; \$3.75 weekends and holidays. Bethpage offers no season rates; has no reservation system nor does it have powered cars. Since the opening of its fifth course in 1958, the Bethpage golf operation has always paid its own way. Seven private clubs (four men's and three for women) have been organized that use Bethpage facilities for their golfing activities.

#### Los Angeles—171 Golf Holes

Los Angeles City presently operates 13 golf courses. These include five regulation 18-hole layouts, four regulation 9-hole and four par-3 courses—a total of 126 regulation length holes and 45 par-3 holes. Grand total—171 holes. During the past five years golf play has averaged more than one million rounds annually on those 13 facilities.

Daily green fees for 18 holes (fees are the same every day of the week) are \$3; with reservations — \$3.50. The charge for a replay (a second 18 the same day) is \$1.50. Also offered is a monthly permit (not good on Saturdays, Sundays or holidays)—cost \$6. Holders of this permit may play 18 holes of golf on weekdays for \$2.

Says Ray Goates, City Golf Manager, "Powered golf cars are available to the public at the city's five 18-hole courses only. They are supplied and maintained by a private concession. A fleet of 195 cars is in use on the five courses and rental fees are \$7 for 18 holes." According to Goates, a \$9 million program to add 72 holes of golf from self-liquidating bonds is now being considered by the Los Angeles City Council.

#### Milwaukee County's 12 Courses

Like the City of Los Angeles, the Milwaukee County, Wisconsin, Park Commission also operates 171 holes of municipal golf. Facilities here include one 9-hole and six 18-hole regulation courses plus one 18- and four 9-hole par-3 layouts.

Milwaukee County offers no season rates; does have a reservation



HARRY ECKHOFF

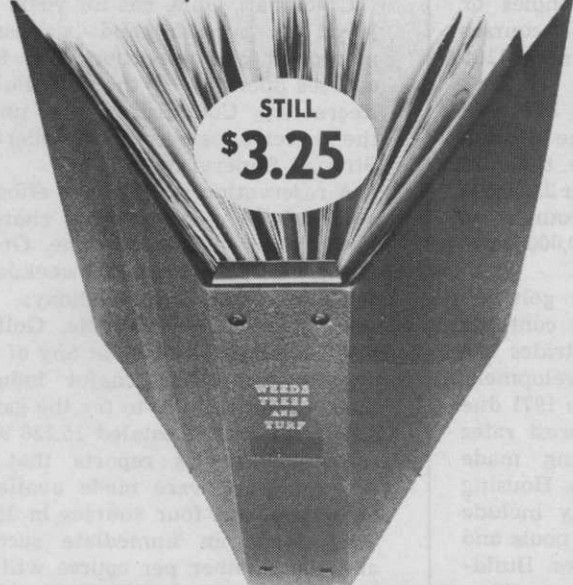
system—charges 50¢ per player for reservations; has powered golf cars only at its new 18-hole, 6910 yard, J. C. Dretzka course. Rental charge is \$6 for 18 holes.

Current adult green fees for 18 holes are \$2 any day. Says William Felton, Jr., Milwaukee County Park Commission Education and Information Officer, "We are anticipating a raise in fees for 1971 which would bring an 18-hole adult permit to \$3 and raise other rates accordingly." About 700,000 daily play permits are sold annually at the county's 12 golf courses.

#### Ohio Municipal Golf

As stated earlier, Ohio, with more than 40 municipal golf courses, is one of the 13 leading states contain-

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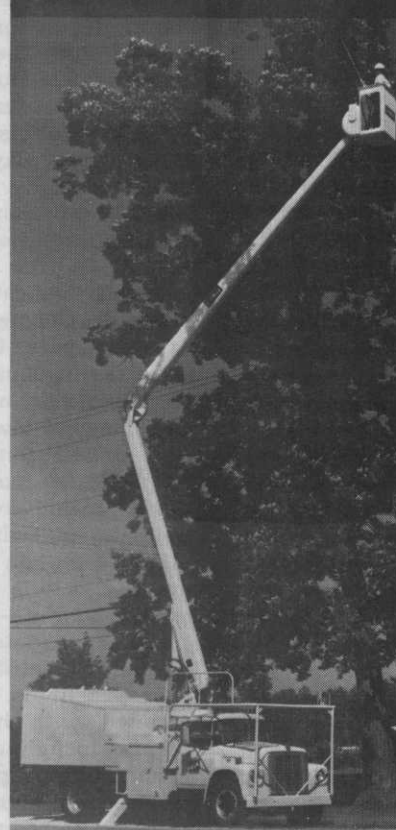
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## GOLF OUTLOOK

By HARRY C. ECKHOFF

WITH 393 new golf courses or additions to existing facilities in some stage of construction at year's end, 1971 should be an excellent year for golf course development. NGF records reveal that 352 of the above mentioned courses are regulation length facilities; 41 are par-3 or executive type.

New regulation length courses in the under-construction category total 252; additions to regulation courses account for 100. For par-3s the figures are 28 and 13, respectively.

Leading states with new golf courses under construction are California, 23; Ohio, 22; Florida, 19; Michigan, 18; New York and Pennsylvania, 16; North Carolina and Texas, 15; Georgia, Tennessee and Washington, 14 each.

Despite the prolonged tight money situation, NGF reports that 314 regulation length facilities (213 new ones and 101 additions to existing courses) opened in 1970. About 42% of these new facilities were private operations, 46% semi-private or daily fee and 12% municipal.

Thirty-eight new par-3 operations (29 new courses and 9 additions) also were reported in play in 1970. Their breakdown by type was 21% private, 71% semi-private and 8% municipal. About one third of the new courses were associated with real estate developments. The total golf course openings of 352 for 1970 were about 9% less than in 1969 when 397 new facilities opened for play.

The leading states with new golf course openings in 1970 were Florida, 26; Texas, 24; California, 21; New York, North Carolina and Pennsylvania, each 18; Michigan,

16; Georgia, 14; Washington and Wisconsin, 13; Illinois, 12; Iowa and Virginia, 11; and Minnesota 10.

NGF records reveal there were 10,188 golf courses in play in the nation at the end of fiscal year 1970. Of these, 4619 were private operations; 4248 were semi-private or daily-fee types and 1321 were municipal. 5343 were 9-hole layouts; 4845 were 18 holes or more. Regulation length courses totaled 9083; the remaining 1105 were par-3 layouts.

NGF estimates there are now 9,700,000 golfers in the United States who play more than 15 rounds annually. Another 2,200,000 play fewer than 15 rounds — making a total of 11,900,000 golfers.

Trends indicate that golf facility development will continue at a fast pace. Great strides are expected in housing development throughout the nation in 1971 due to somewhat lower interest rates and more money being made available for mortgages. Housing developments frequently include golf courses, swimming pools and other recreation facilities. Builders are selling environment as well as houses — thus providing a place for one to live and play. Probably a third of the new golf courses built in 1971 will be associated with housing developments including new planned communities, high rise apartment and condominium complexes and vacation or resort homes.

ing such facilities. The greater Cleveland area has 162 holes of municipal golf—72 holes operated by the Cleveland City Department of Parks and Recreation and 90 holes operated by the Cleveland Metropolitan Park System.

The Cleveland City operation includes two excellent 36-hole facilities — Highland Park and Seneca. Both have complete irrigation systems. The first two Cleveland Opens were played at Highland Park in 1964 and 1965.

Green fees for 18 holes at the Cleveland courses are \$3 any day. Also available is a season rate good for unlimited golf play—cost: \$115 for residents; \$190 for non-residents. Senior citizens age 65 and over may play golf on Monday, Tuesday and Thursday until 3 p.m. at the special rate of \$1 for 9 holes; \$1.75 for 18.

The six municipal courses (90 holes) operated by the Metropolitan Park System are under the general supervision of Harry Burkhardt, Superintendent of Golf for Cleveland Metropolitan Parks. Like the Cleveland city facilities, they are excellent golf courses. Green fees on the metropolitan courses vary from \$3 for 18 holes and \$1.50 for 9 to \$4 for 18 and \$2.25 for 9, depending on the course played. Many of the area industrial leagues use these courses and the play all week is reported as heavy.

Cincinnati, Ohio, has for years enjoyed a popular and successful municipal golf operation. The four courses operated by the City Public Recreation Commission are under the direct supervision of Robert J. Strauss, Supervisor of Golf.

A reservation system is in effect—a fee of 10¢ per person is charged for a reserved starting time. Green fees for 18 holes are \$2.60 weekdays; \$3.30 weekends and holidays. No season rates are available. Golfers may rent a set of clubs at any of the courses for 50¢—a major inducement for a beginner to try the game. Last year rentals totaled 15,736 sets.

Robert Strauss reports that 14 powered cars were made available at each of the four courses in 1970. They were an immediate success and the number per course will be increased to 20 in 1971. Rental fees for 18 holes are \$6 weekdays; \$7 weekends and holidays.

Says Strauss, "Perhaps the most meaningful municipal golf programs we have initiated have been the Men's Senior Golfers Organizations and the Women's Golfers groups formed at each of the four courses. These groups are granted weekday morning starting time reservations

and pay regular green fees. They conduct their own affairs completely—have wonderful golfing fun and use the courses at times when play is not too heavy.”

Membership in each of the organizations is held to 100 because of starting time limitations. Clubs at two of the courses have waiting lists. Senior citizens may play 18 holes for \$1.50 Monday through Friday from opening of course to 12:00 noon tee-off time.

A Youth Golf Association involving hundreds of boys and girls 18 years of age, or younger, is also sponsored by the Cincinnati Recreation Commission. Requirements for membership — signing a pledge to abide by course rules and the etiquette of golf and payment of a \$1 annual registration fee. Members have the privilege of playing one day a week at each course during specified hours for a \$1 green fee. During summer vacation YGA members must tee off before 10 a.m. and complete their play by 2 p.m.

#### Atlanta Operational Policies

Atlanta, Ga., operates seven municipal golf courses—four 18-hole layouts and three 9-hole facilities—a total of 99 holes. Brown’s Mill, a new 18-hole course, opened for play in September, 1970. The city plans to have two additional 18-hole courses by 1985.

According to Martin Petsonk, City Superintendent of Golf Courses, golf play on the Atlanta courses has been averaging about 200,000 rounds annually. There is no reservation system; they operate on a policy of first come, first served. Weekday 18-hole green fees are \$3; weekends and holidays \$4. Nine-hole fees are \$1.50 and \$2 respectively. City offers season rates as follows: yearly pass good on all city courses—\$100; yearly pass good only on one course—\$75; senior pass (over age 65) good on all courses—\$50. All golfers must sign in with the golf starter. Foursomes only are permitted on weekends during periods of heavy play.

Powered golf cars are available. They have an average of 30 cars at the 18-hole courses; 15 cars at the 9-hole facilities. Course regulations state that powered cars must stay off tees and 30 feet from the greens. There can be only two riders to each car and riders must have valid driver’s licenses.

#### Union County Golf Program

The Union County (New Jersey) Park Commission has for years had a very successful municipal golf



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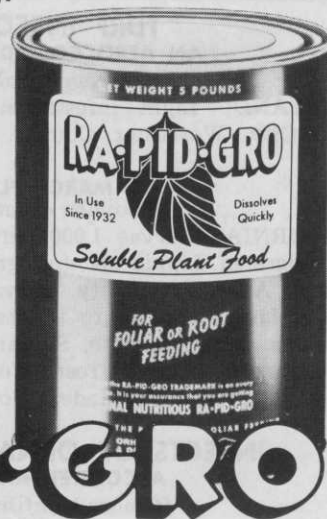
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operation. Its facilities include the 27-hole Galloping Hill course at Kenilworth and the 18-hole Ash Brook layout at Scotch Plains. According to George Cron, General Superintendent, Galloping Hill serves about 85,000 players a year; Ash Brook averages 60,000 annually.

Galloping Hill Golf Course maintains a fleet of 30 powered cars; Ash Brook has 25. Rental fees are \$8 for 18 holes; \$4 for 9. Union County has a special green fee schedule for county residents who annually qualify for a golf identification card. This fee is only about half the amount charged non-resident players. Green fees for out-of-county players for 18 holes are \$4 weekdays; \$6.50 weekends and holidays.

#### Increased Maintenance Costs

Like most expenses, those for course maintenance are increasing, so some municipalities are raising green fees. Atlanta, Ga., this year increased its 9-hole weekday rate from \$1 to \$1.50 and 9-hole weekend rate from \$1.50 to \$2. Eighteen-hole weekday rate went from \$2 to \$3; weekend and holiday rate, \$3 to \$4.

Asheville, N.C., raised its annual resident season permit from \$80 to \$100. Fees were also upped this year at the eight Denver, Colo., municipal golf operations. As stated previously, Milwaukee County plans to raise its green fees 33½% next year—from \$2 to \$3 for 18 holes. The prevailing rate at many mid-Atlantic municipal courses for 18 holes is \$3 weekdays; \$4 weekends and holidays; after 5 p.m.—\$2 any day.

Maintenance costs increased about

6% last year. Over the past 15 years they have increased 85%. Findings of a nationwide survey of 75 representative courses reveal maintenance costs averaged \$4,577 per hole of which \$2,824 was for salaries and wages and \$1,753 for all other expenses. Range for an 18-hole layout was from about \$60,000 to more than \$100,000.

#### Golf Course Planning

When should a municipality consider the development of public golf courses? An acceptable yardstick for daily fee and municipal courses is one 18-hole operation for every 20,000 to 25,000 persons. City and town officials considering the development of a municipal golf course often appoint a citizens committee to make a detailed study for such a project along with specific recommendations for its accomplishment—if the project is deemed feasible.

Included in the study will be complete justification for the need and desirability of a golf course for the area; suggested sites along with expected land acquisition and course construction costs; suggested methods of financing the entire project and estimated operating income and expenses for the planned facilities.

Many municipalities developing golf facilities are taking advantage of a state grant-in-aid program administered by the Bureau of Outdoor Recreation, U.S. Department of Interior. Under this program, local governments may submit requests to their respective state offices for outright grants to acquire

or develop urgently needed public outdoor recreation facilities.

Most existing municipal golf courses were financed by general obligation bonds issued by the municipality concerned or by general budget allocations. In recent years, cities and counties having legal authority to do so have financed many municipal courses through the issuance of revenue bonds which are payable from the net income received from the operation of the golf course.

Such net income can be and often is substantial. Municipal golf courses can be profitable if realistic green fees are charged and the facilities are properly managed. Actually, golf course revenues can and frequently do go a long way toward providing the free recreation facilities for communities since the golf course usually is the largest revenue-producing unit in a recreation program.

And this is but one of the ways in which a golf course benefits a community. There are many others. Golf facilities stimulate civic pride and create new business; they beautify and preserve open space and increase property values in surrounding areas; they attract new industry, tourists and conventions and—perhaps most important—they provide healthful, enjoyable recreation for all age groups.

It is doubtful that the nation will ever have sufficient municipal golf courses to meet the constant growing need. It is certain that municipal golf will play an increasing role in the overall American golf scene in the years ahead.

## insect report



### TURF INSECTS AN AEROCOCCID SCALE (*Eriococcus carolinae*)

MARYLAND: Light infestation on beachgrass near Ocean City, Worcester County. This is a new state record.

### A MARCH FLY (*Dilophus orbatus*)

CALIFORNIA: Larvae 1,000 per square yard in one-eighth acre of *Lippia* sp. and grass sod in nursery at Oakland, Alameda County. Larvae 15 per square foot in some lawns and up to thousands along walks and driveways at Sacramento, Sacramento County; 50 per square yard at Fresno, Fresno County. Adults heavy in some lawns at Madera, Madera County.

### INSECTS OF ORNAMENTALS A CONIFER APHID (*Cinara tujafilina*)

OKLAHOMA: Counts and colony size increased on

arborvitae in Payne County past 21 days. Up to 25 aphids per colony.

### YUCCA PLANT BUG (*Halticotoma valida*)

MISSISSIPPI: Moderate to heavy on yucca plants in Montgomery, Choctaw, and Oktibbeha Counties.

### TREE INSECTS

#### ELM LEAF BEETLE (*Pyrrhalta luteola*)

KANSAS: Overwintering adults found under firewood at roadside park north of Syracuse, Hamilton County, and same location in park at Tribune, Greeley County. These are new county records. Now occurs statewide.

#### OBSCURE SCALE (*Melanaspis obscura*)

ALABAMA: Dominant scale species on 80% of oak trees growing on lawns and streets at Auburn, Lee County. Many heavily infested with lower limbs dead or dying. Scales on many limbs touch and overlap.

# meeting dates

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    | 1  | 2  | 3  | 4  | 5  |    |
| 6  | 7  | 8  | 9  | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | 31 |    |    |

**25th Northeastern Weed Science Society** at Hotel Commodore, 42nd Street at Park and Lexington Avenues, New York City. Jan. 6-8.

**Georgia Golf Course Superintendents Association** annual meeting at Callaway Gardens, Pine Mountain. Jan. 10-12.

**Mid-Atlantic Association of Golf Course Superintendents** turf conference at the Holiday Inn, Howard and Lombard Sts., Baltimore, Md. Jan. 11-12.

**Tennessee Turfgrass Association** annual conference, Sheraton Hotel, Nashville, Tenn. Jan. 11 and 12.

**New Jersey Recreation and Park Association** 5th annual parks symposium. Lewis M. Herrman Labor Education Center, Rutgers University, New Brunswick, N. J. Jan. 13.

**University of Nebraska** annual turf conference, Lincoln. Jan. 13-15.

**23rd California Weed Conference.** Woodlake Inn, Sacramento, Jan. 18-20.

**Associated Landscape Contractors of America** ninth annual meeting and trade exhibit at the Royal Orleans Hotel, New Orleans, Jan. 18-22.

**Southern Weed Science Society** 24th annual meeting at the Sheraton-Peabody Hotel, Memphis. Jan. 19-21.

**41st Michigan Turfgrass Conference.** Kellogg Center, Michigan State University, East Lansing. Jan. 26-27.

**Virginia Turfgrass Conference,** Sheraton Motor Inn, Fredericksburg, Va. Jan. 26-27.

**Pennsylvania-Delaware Chapter, International Shade Tree Conference,** 6th annual Shade Tree Symposium. Memorial Hall, 44th and Parkside, Fairmount Park, Philadelphia. Jan. 27-28.

**42nd Golf Course Superintendents Association of America** International Turfgrass Conference and Show. Denver Hilton, Denver, Colo. Feb. 7-12.

**Weed Science Society of America.** Statler-Hilton Hotel, Dallas, Tex. Feb. 8-11.

**National Landscape Association,** Admiral Semmes Hotel, Mobile, Ala. Feb. 14-17.

**National Arborist Association,** International Inn, Tampa, Fla. Feb. 14-18.

**National Symposium on Park, Recreation and Environment Design,** Sheraton O'Hare Motor Hotel near Chicago. Feb. 15-17.

**Regional Lawn and Garden Retailers Day.** Half-Way House, Darien, Conn. Feb. 18.

**Penn State Turfgrass Conference,** Keller Conference Center, Campus, Pennsylvania State University, University Park, Pa. Feb. 22-25.

**Midwest Regional Turf Conference,** Purdue University, Lafayette, Ind. Mar. 1-3.

**Ground Maintenance Conference,** University of Connecticut and Southern Connecticut Groundskeepers' Association, Waverly Inn, Cheshire, Conn. Mar. 3.

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## Lawngrass Extraordinary ....

# FINE FESCUES



Individual plants of fine fescue are from the left Pennlawn, Wintergreen and Highlight. In these samples, Wintergreen displays a prominent rhizome, Highlight almost none. Lawn Institute photo.

By DR. ROBERT W. SCHERY, Director  
The Lawn Institute

THE FINE or red fescues, *Festuca rubra*, in many varieties and subspecies, is circumboreale today but probably of European origin. Fine fescue is one of the two major lawngrasses utilized generally for fine turf in North America and Europe, where the custom of having ornamental home lawns has become so widely perfected. Fine fescues are especially noted for their attractiveness and tenacity where growing is difficult, such as on poor soil, in dry locations, and under shade. They make an excellent companion for Kentucky bluegrass in the seed blends used for lawns from the border states northward in the United States.

The fescue group is a confusing one, the distinctiveness even of species often being based upon obscure characteristics. It is not at all strange, then, that variety identification becomes all but impossible for anyone but the expert. Varieties are distinguished mostly by physiological response and resistance to disease, rather than by distinctive visual features. The species spreads by underground stems or rhizomes,

but the Chewings type (*F. rubra commutata*, = *F. r. fallax*) is theoretically a bunchgrass. However, all cultivars seem to yield plants that have at least a degree of the rhizoming habit. Whether an individual plant grows in tufts or spreads by rhizomes may be more a response to habitat than to genetic makeup! There is little doubt that widespread crossing occurs between varieties throughout the world, and many cultivars no doubt contain both "creeping red" and "Chewings" blood lines.

In North America, fine fescues are listed by Hitchcock as endemic in all except a few of the prairie states and those bordering the Gulf of Mexico. They are very much at home in the more northerly regions, and volunteer widely in western Canada. *Festuca rubra* usually resents waterlogged soil in hot weather, but ecotypes are found in marshy habitat both in northern Europe and many parts of North America (viz., according to Hitchcock, "meadows, hills, bogs and marshes in the cooler parts of the northern hemisphere, extending south — to the San Ber-

nardino mountains — New Mexico — the Allegheny mountains and the Atlantic coastal marshes to Georgia.").

Chewings fescue, was for many years exported to the United States from New Zealand, but shipping difficulties and inability to maintain high standards of quality helped switch seed production to Oregon where most Chewings is now grown. An Oregon selection of Chewings is known as Cascade.

### Fine Fescue Traits

The fine fescues have many attributes marking them as top lawngrasses. The foliage is of an attractive, delicate texture, yet dense enough to restrain weeds well; its color is a lustrous dark green that blends beautifully with most bluegrasses. The leaves themselves are rather wiry and resilient; leaf margins are generally rolled inward giving a curled appearance to the leaf in cross section, especially during dry weather. The leaf sheaths are fibrous, reddish, persistent, a good distinguishing feature helping to identify fine fescue in a mixed turf.

Rhizome spread is not so manifest as with bluegrass, but most varieties expand well to fill-in scarred sod. Seedheads are produced early in summer, but are seldom much in evidence with plants crowded into a lawn. The grass is a little more fibrous than is bluegrass, and should be mowed with equipment kept sharp and in good adjustment.

It is apparent that fine fescues adapt widely, although their turf quality is not the best in hot-humid climates. They are very tolerant of soils, thriving on everything from peaty bogs to near sands and on infertile, rocky mountain sides. As to fertility, they can take it or leave it. Tests confirm that fescues have a better color and appearance when well fertilized, but seldom is it necessary to use more than two or three pounds elemental nitrogen (N) per 1,000 sq. ft. (M) annually, — considerably less than with most lawn species. As with bluegrass, fertilization is best practiced during the cooler parts of the year. Fine fescues are good insurance in a seed mixture for lawns that cannot be intensively tended; they usually survive where lesser grasses won't, — in sandy, wind-swept spots, for example, or on dry, infertile parts of the lawn. They persist in shade where competition with tree roots is often too much for other grasses. Obviously, fine fescues are excellent, low-maintenance grasses, self-sufficient and recuperative.

Fine fescues are quite tolerant to cold (seedlings, of course, may heave in winter, decimation then being more from desiccation than from low temperature). In northern Michigan, Highlight, Pennlawn and Chewings varieties showed the least winterkill in recent tests, and even so far north as Alaska (where many turfgrasses do suffer winter injury) tolerant fine fescues have been found (Arctared, Table 1, is being tested as a possible commercial introduction).

#### Growth Pattern

Fine fescues follow essentially the Kentucky bluegrass growth cycle. The grass builds up food during cooler weather, becoming dense through proliferation of new tillers, and spreading to a greater or lesser extent by rhizomes. If fertilized in autumn, fescue turf is essentially resplendent the following spring, beautifully thick, of deep color, and with an elegant texture. During summer, fine fescues may experience thinning and become patchy, especially if the weather is hot and muggy, the soil saturated. Die-out is usually blamed on "disease," but

seems more a reflection of physiological weakening. Nevertheless, fescues are attacked by several diseases, of which leafspot (*Helminthosporium*) is serious as weather warms, and redthread (*Corticium*) and snowmold (*Typhula*, *Fusarium*, etc.) more active in cooler weather and winter. Where summer weather encourages patchiness, fine fescues are usually blended with Kentucky bluegrass. Sparing use of fertilizer during the warm season should also help withstand disease. High mowing (1½ inches or more) aids survival, yet in equable climates such as England fine fescue can be mowed as low as is a bentgrass. Winterseedings of golf greens in the South with mixtures containing fine fescue also survive for the season mowed at one quarter inch.

#### Maintenance

Maintenance requirements are not onerous with the fine fescues. Rather casual fertilization often suffices, a pound or two of N/M keeping the grass reasonably attractive. Up to 6 lbs. N have been used with spectacular results so far as color and density are concerned, but only in northerly locations where summer problems are not serious. As with any grass, fertilization should be matched to the soil, keeping in mind that by-and-large fine fescue gets by with half or less the amount of fertilizer recommended for elite bluegrasses, bentgrasses and bermudagrasses.

With so drought-tolerant a grass, irrigation is seldom vital, but as for any well-kept turf is needed during periods of drought in order to hold the grass green. Be especially careful with fine fescue not to over-water, something that can prove disastrous on poorly drained soils in warm weather.

Because of their density and tenacity, fine fescues remain relatively free of weeds without much attention. There is even a hint that they inhibit the sprouting of weed seeds; weed seedlings may have difficulty gaining a toehold. When weeds do occur, fine fescue is reasonably tolerant of the conventional herbicides. Phenoxy materials used at recommended rates free fescue from most broadleaf weeds without injury. Fine fescue is a little less tolerant to some pre-emergence crabgrass preventers than is bluegrass, damage having been reported from bandane, benefin and DCPA; on the other hand, if kept on the dry side, and used as shade grass (as often is the case), there will not be much crabgrass

#### BOOK REVIEWS

**THE PLANT KINGDOM** by Ian Tribe, The Rowland Co., Inc., 415 Madison Ave., New York, N.Y. 10017.

What is a plant? The answer is not so simple, according to Dan Tribe, author of *Plant Kingdom*, one of the interesting and informative books in the new Grosset & Dunlap series of all-color guides. "It's easy to say that a plant is green, has stems, roots and leaves," he says. But numerous exceptions can be found. Some plants are yellow, brown or red. And roots and leaves do not appear as such in the lower order of plants. The author breaks down the vast membership of some 300,000 recognized members or species into major groupings. Among these are algae, mosses and flowering plants. Next he considers the plant as a living organism which grows and reproduces itself. The amazing solutions to living within the plant kingdom rival in interest and variety anything that can be said about animals, Tribe asserts. The book has 410 color illustrations.

**TURF MANAGEMENT HANDBOOK** by Howard B. Sprague, former executive secretary of the Agricultural Board of the National Research Council, National Academy of Sciences. Interstate Printers & Publishers, Inc., Danville, Ill. 61832. \$9.25

This book is a practical guide to turf culture, explaining the life processes involved, and describing the specific grasses, materials, equipment and procedures that have been found to produce desirable results with a minimum of effort and expense. Here are the chapter subjects: (1) Basic information; (2) Soil conditions for healthy turf; (3) Soil acidity and liming to correct it; (4) Practical use of fertilizers on turf; (5) Soil humus and grass management; (6) How grasses grow; (7) Characteristics of turf grasses for cooler regions; (8) Characteristics of turf grasses for warmer regions; (9) Planting new turf; (10) Regular care of turf; (11) Special turf problems and renovating poor turf; (12) Controlling weeds; (13) Controlling diseases; (14) Controlling insects and other pests; (15) Seasonal schedules for management of turf areas. The book has 258 pages and numerous illustrations.



A partially separated plug of fine fescue mowed about 1¾" high. Note dense growth of tillers, fine texture, and persistent leaf sheaths. Lawn Institute photo.

competition in any event. At the Lawn Institute, fine fescue has been singularly free of coarse species, seeming in time to "squeeze out" tall fescue, timothy, and even quackgrass.

Fine fescues are tolerant of the familiar insecticides and fungicides. Sod webworms, chinch bugs, and other insects, can be controlled with most any insecticide approved for household use, if applied as directed. At the Lawn Institute, there has been little need for or benefit from fungicide applications, but reports indicate that persistent application of a fungicide may help prevent summer thinning. Named fescue cultivars being bred today are at last in part selected for some immunity to disease.

#### Propagation

Fine fescue is propagated almost exclusively by seed. Consumption of fine fescue seed in the United States reaches almost 30 million pounds, about half imported. Most domestic seed is sold as named varieties, generally preferred because of pedigree and because it is carefully grown as an agricultural crop rather than simply harvested from volunteer stands (as is often the case in western Canada).

Fine fescue seed is of medium size, abundant enough by the pound to be quite a bargain (over a half million seeds to the pound, yet large enough to distribute easily and carry sufficient nutrients for excellent seedling vigor. Fescue included in a bluegrass blend sprouts somewhat ahead of the bluegrass, and is really a superior "nursegrass" to some of the temporary grasses that contribute nothing to the eventual sod. Domestic seed is mostly cleaned up to a high level of purity, and is free of pernicious

weeds or coarse crop species. On the modern label fine fescue joins bluegrass and bentgrass in the "fine-texture" category, in such varieties as are listed in Table 1 at the end of this article.

Fescue is usually sowed 3 or 4 lbs./M alone, or 2-3 lbs./M in mixtures with bluegrass. The seed distributes very nicely in modern lawn spreaders. If the weather remains warm and the new seeding is well watered, fescue should be visible in about a week. A mulch is recommended over new seedings to prevent drying out, ensuring more rapid germination. Recent studies by Dr. Wood at the University of Vermont indicate that fine fescue tops the list of grasses tested for seedling tolerance to drought. The variety Golfrood was especially noteworthy in the data reported.

**Table 1. Fine fescues commercially available or expected soon in North America.**

|                         |             |
|-------------------------|-------------|
| Arctared                | Illahee     |
| Boreal*                 | Jamestown   |
| Cascade                 | Olds*       |
| Chewings**              | Pennlawn    |
| Duraturf*               | Rainier     |
| Golfrood**              | Ruby**      |
| Highlight**             | Wintergreen |
| * Canadian              |             |
| ** European origination |             |

**Table 2. European fine fescue selections still under test, or not available in the United States.**

Barfella, Bargena, Bergere, Brabantia, Cottage, Dawson, Echo, Elco, Erika, Oasis, Polar, Reptans, Rubin, S-59, Sceempter, Steinacher, Tjelvar, various selections known by code numbers only (including a number of American selections).

#### Varieties

The great similarity in appearance between fescue varieties has been commented upon; most are interchangeable. This similarity also extends in some degree to performance; reports indicate now one, now another selection slightly superior a given year, a given location or a given season.

As is evidenced by Tables 1 and 2, a search for improved fine fescues is in full swing. Many new varieties appear each year, a number of them developed in Europe and sent to Oregon for seed production. Some are bred for density when planted alone, others with more open growth for blending with Kentucky bluegrass.

Pennlawn is an especially interesting case. It was bred some years ago from parental selections made at Pennsylvania State University, selected for resistance to disease. Dr. Musser had accumulated promising clones from the golf course fairway (seeded several decades before to seed of European origin) and from seed of domestic and foreign sources. Three superior strains (F-55, F-74, F-78) were eventually screened out on the basis of performance both at University Park Pennsylvania and Beltsville, Md. Planted together, they yield seed that is the synthetic variety Penncross, superior to any of the parents alone.

Very similar to the fine or red fescues are the hard or sheep's fescues (*F. ovina*) of which one or two turf varieties are now being developed. Neither the fine nor the hard fescues should be confused with the tall fescue group (*F. arundinacea*), however for the latter are coarse varieties used mostly for pastures (but also planted to lawns in the upper South, where the hot summers are inimical to fine fescue and Kentucky bluegrass).

Table 1 lists fine fescue varieties available on the market today, or expected soon. Table 2 lists additional cultivars not generally available in this country. Some of the coded selections may become fescue stars of the future if they pass their screen tests well. Meanwhile the traditional varieties such as Chewings, Illahee, Pennlawn and Rainier carry on, doing all the things a fine fescue is meant to do, including backing up Kentucky bluegrass in lawn mixtures offered generally from the border states northward in the United States.



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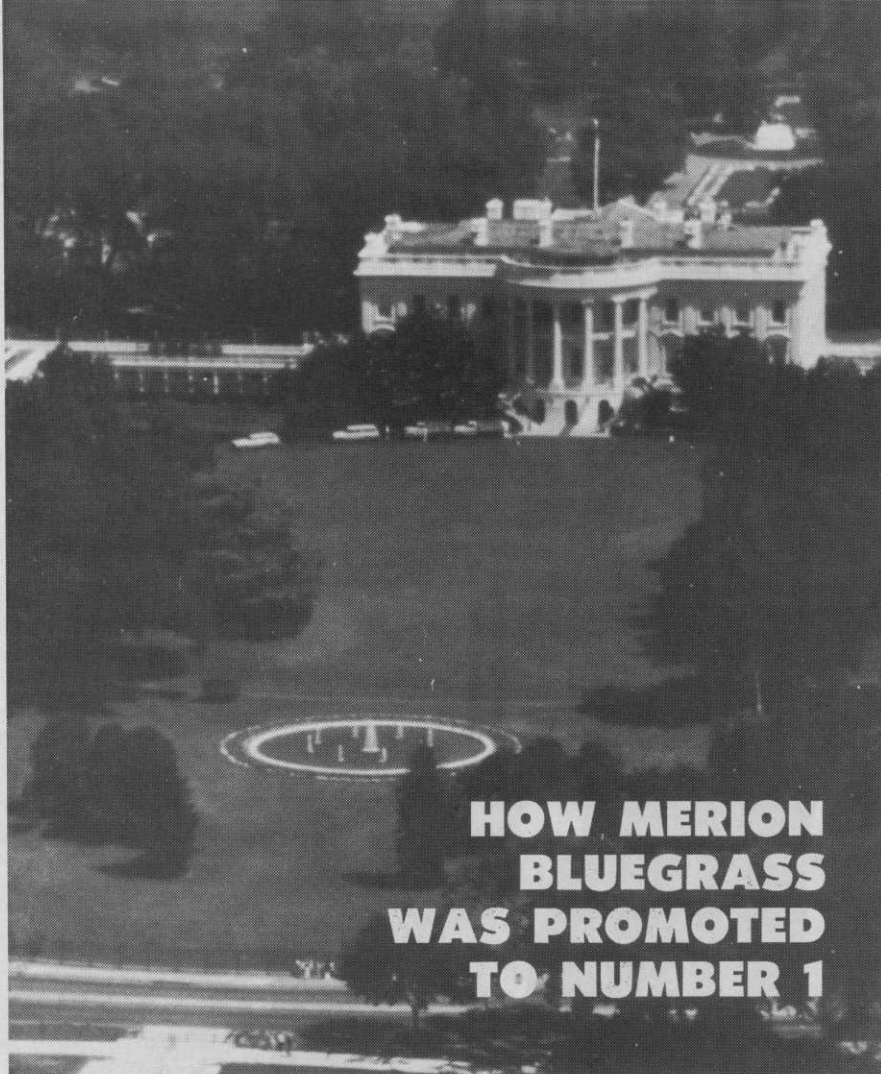
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## HOW MERION BLUEGRASS WAS PROMOTED TO NUMBER 1

By MARGARET HERBST  
Director of Information  
Merion Bluegrass Association

**P**PROMOTION of Merion Kentucky Bluegrass has been a process of carefully selecting ideas, proceeding step by step in a consistent program, and adopting new projects each year to supplement those found most effective. Promotion really began in 1954.

We started with the establishment of trial grounds in various parts of the country to establish authority for recommendations in planting and maintenance.

Here was a new grass that had to be handled in a way all its own.

We honored the men who had pioneered in the development of Merion: Joe Valentine, its discoverer, Burt Musser of Penn State and Dr. Fred Grau.

To show of its beauty, and for publicity purposes, Merion sod was installed at the "House & Garden" model home for the first time. Naturally, magazine and newspaper articles played their part in the campaign. The first trade ads appeared and the first cultural folder was produced. The year culminated

in the production of a film which could still be used.

### Technical Bulletins

In 1955, technical bulletins were produced based on the trial ground work. The M.B.A. story was carried to trade meetings, and the first sales aids were developed. Grants were made to Penn State and Purdue for the study of rust, which had reared its head. The first newspaper ads were scheduled, visits were paid to dealers, the film went into distribution, and the booklet "The Greatest of the Grasses" was issued embodying all of the latest research.

Visits to the trial grounds were on the agenda in 1956. An exhibit was staged at the Garden Supply Merchandiser Show, and a talk on merchandising given at the American Seed Trade Association Convention. That was the year when the officers and Board of Directors went down to the Madras area; the growers there were refusing to be taxed without representation. We put on a repeat of the annual meeting that will never be forgotten by those in attendance—and the growers gave their support once again. For the first time, Australia began

to promote B-27, the name that is still used in commerce by that continent. B-27 has now been planted in every capital.

In 1957, the technical bulletins were stepped up. Revisions had to be made in the booklet "The Greatest of the Grasses." The first magazine ads were scheduled, plus heavy newspaper insertions. The Long Island Garden Show, for the first time, featured Merion sod in every garden. Our film was shown on television in a number of cities. Competition with Common Kentucky Bluegrass had to be met, and our growers and members needed stimulation; the first version of the brochure on the Merion Bluegrass Association thus came into being.

The next year we gathered together endorsements by turf authorities in different parts of the country. A three-page spread in *LOOK Magazine* on Yankee Stadium appeared and was merchandised. Fenway Park in Boston installed Merion sod. For the first time, I talked before golf course superintendents at the Massachusetts Turf Conference held at Amherst. Lower prices were now in effect, and the fall campaign was accelerated. Before the advent of Merion, a spring campaign was considered more important.

### Education for Better Sales

In 1959, it was apparent that sales clerks needed more education for better sales. The special brochure produced for this purpose was widely distributed. As a result of endorsements by turf authorities, two posters were developed, one on Testimonials and the other called "Ten Reasons," which are still useful. The consumer had many questions about the new grass; we analyzed the ten most frequently asked questions, and their answers became the basis of the leaflet "Care and Maintenance." Our grass even became part of the National Flower competition.

In 1960 the same procedure was followed of researching the ten most often asked questions and their answers on planting, which led to a companion brochure. With lower prices, mixtures could be upgraded, and for that reason the spring campaign was stepped up. Greater competition now existed with the advent of Park and Newport. Another new technique was initiated with the *Lawn News* series of radio recordings, produced for spring and fall seasons, and regularly utilized by almost 200 stations even today.

Each year our editorial approach has been consistent throughout the