

2. Single full membership (\$200), same as family, but for a single individual only;
3. Family tennis (\$100) and single tennis (\$75), which allows member(s) to use tennis facilities on an unlimited basis;
4. Family bath and tennis (\$150) and single bath and tennis (\$100), which allows member(s) to use swimming and tennis facilities on an unlimited basis (for Toftrees residents only);
5. Nonresident (\$100), allows member and spouse who live outside a 50-mile radius to play golf on an unlimited basis.

Those staying at the lodge pay the same fees as public players: \$5 for 18 holes on weekdays, \$6 on weekends. Golf cars (25 to begin with) are \$8 for 18 holes and \$4 for nine holes. Tennis courts are available by the hour at no charge and lockers and saunas also are free for guests.

Sieg also established a transient charge system, which he felt was excellent for year-around. Items can be charged to a personal account and payment of full personal account by cash, American Express or Master Charge. Regular members are billed directly to their homes through the club charge system. Membership fees are payable quarterly, biannually or annually.

In addition, the club instituted a reservations system, which members and non-members use to reserve a tennis court or starting time. Although it received only 70 per cent utilization when initiated, it now has more than 90 per cent use with very few no-shows.

The cost of the complex was \$900,000 for the clubhouse (including tennis courts and pools) and \$300,000 for the lodge. Says Sieg, "Naturally, it costs a little bit more to go first class. But, as is so often the case, an investment in the best means a far greater return. First, we own adjacent property that now is much more valuable. Second, by using a top designing firm, I obtained a beautiful design that was less costly than a traditional one and they were able to take care of all the details, making the entire complex look like a well thought out, complete project that takes just about everything into consideration. Third, because of the design that Alan [Meyers] came up

continued on page 47



A conversion pit and fireplace is located off the cocktail lounge. Light fixtures, wall hangings, furniture, and even place settings, were selected to coordinate the total interior.

RENOVATION '74: *THE OLD SUITS THE NEW*

Decisions to "modernize" should be weighed carefully against diminishing character touches

by DOUGLAS LUTZ

Many regulars at Licking Springs Trout and GC in Newark, Ohio, carry an extra stick in their bags. A fishing pole, to be exact. The fly rod has been standard equipment at Licking Springs for many years.

A bubbling stream, presently stocked with smallmouth and rock bass meanders through this semi-private, 6,290-yard, par-72 layout, adding a particularly unique feature to an off-beat golf course.

Jan Michalek, a fish expert, was imported from Europe in 1961 to renovate and maintain the trout stream and fish hatchery. Michalek traces his expertise with raising fresh water fish back to 1324 when the forebears of both his parents performed the same function for Prague royalty in his native country, Czechoslovakia.

In addition to providing fishing pleasures for the membership, Licking Springs permits the public to try its hand along the stream with small floating lures and salmon egg bait any day of the year—at a fee, naturally. An-

glers are charged \$2 a day and \$.12 an inch for any fish they catch.

Not many courses can boast of their own trout streams or their own resident fish expert. There are, however, unique and antique features at many courses that should be, and frequently are, highlighted.

Serious consideration should be given by course owners and operators before the zeal for "modernization" eliminates touches of the past and before expedient decisions in the interest of faster play remove qualities unique to a particular layout.

Nostalgia, much in evidence these days in fashions, films and literature, may be found in various forms at many golf courses. Retaining nostalgic touches can add character to a course. Additionally, emphasizing unique features enhances the general look and feeling, frequently adding to the pleasures of a round. That ice-cold drink from an old-fashioned hand pump at a course wise enough to retain one will be remembered by golfers long after

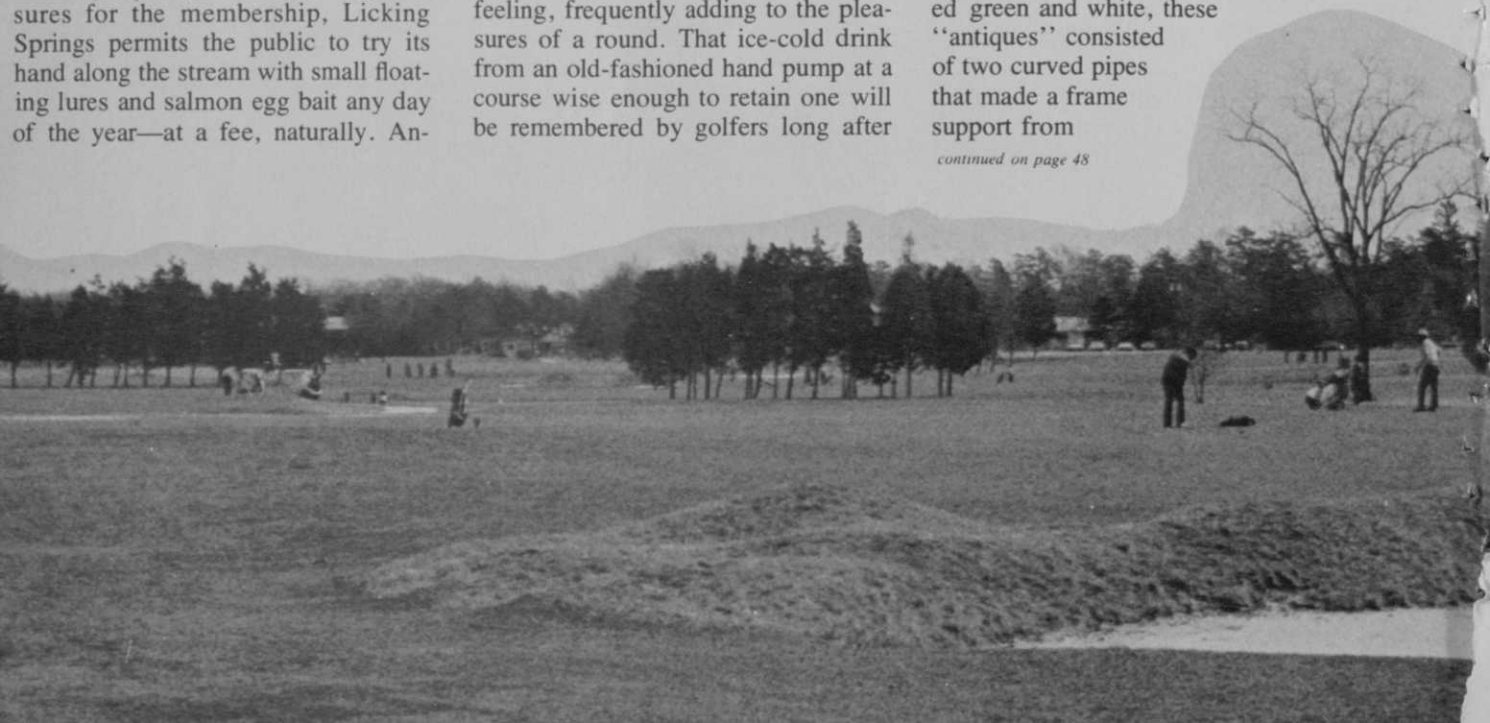
some of their bad shots are forgotten.

Pennbrook CC, a commercial course in Basking Ridge, N.J., features just such a link with the past. Where three tees and three greens converge, an old hand pump has served up crystal clear well water for more than 35 years. A chipped enamel cup, traditional around any old hand pump, rests on a post within easy reach.

Pennbrook is geographically unique, too. Four of its holes range the side slope of one of Watchung Mountain's ridges. The rest are flat fairways spread like giant green fingers into the thick forests and watery acreage of New Jersey's Great Swamp, a wildlife preserve.

The management at this venerable layout reluctantly bowed to progress recently when they eliminated their old-fashioned ball washers. Gaily painted green and white, these "antiques" consisted of two curved pipes that made a frame support from

continued on page 48



Roger Beadle (right), SCS district conservationist, checks out fishing at Orleans CC. NBC reporter Jim Collos (below) drinks while Tony Boschetti, CBS production coordinator, works Saddle River's old water pump.



Old Orchard's island green (above) at end of long par four seventh hole. Traps, formed by scooping and piling (left), were left in natural state at Lakewood CC. Ancient hillocks in background add still more character.

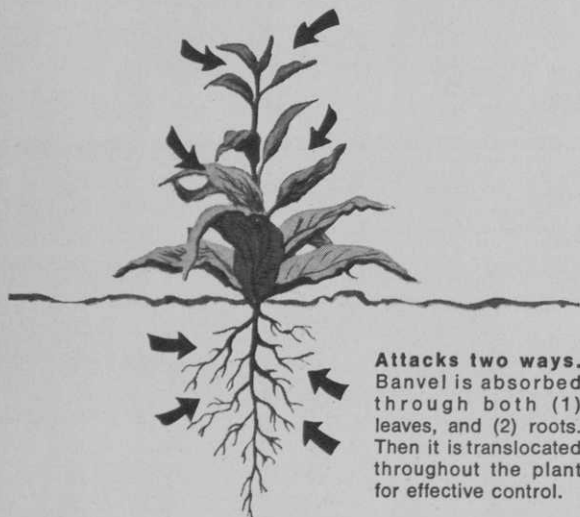
PHOTOGRAPHS BY DOUGLAS LUTZ

Fairway traps remain today to add distinction along edge of flat fairway at Lakewood in New Jersey's pine belt.

Solve tough turf problems...

BANVEL®

for weed control.



Attacks two ways. Banvel is absorbed through both (1) leaves, and (2) roots. Then it is translocated throughout the plant for effective control.

Banvel works in the chilly, early spring, or late in fall—whenever weeds are growing. This can give you a head start on weed control, and give grass a head start on growth. Banvel is completely water soluble. Equipment can be cleaned with water alone. Banvel's acute oral LD₅₀ is 2900 mg/kg. At recommended rates, it is nonphytotoxic to established turf.

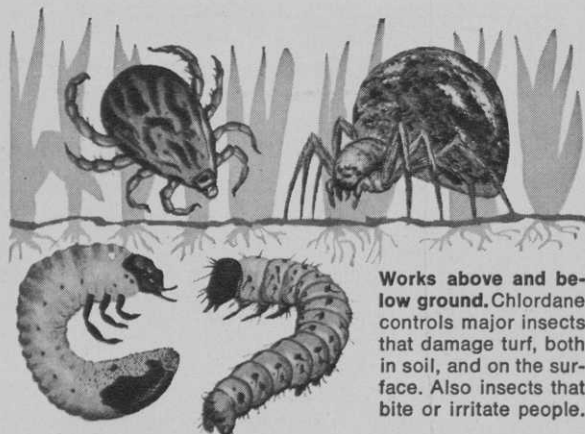
Banvel 4-S. Controls broad spectrum of tough deep-rooted weeds, many tolerant to 2,4-D — like clover, chickweed, knotweed and many others. Each gallon contains equivalent of 4 lbs. dicamba.

Banvel + 2,4-D. Combination controls most major broadleaf weeds in lawns and turf. Gallon contains equivalent of 1.5 lbs. dicamba and 3 lbs. of 2,4-D.

Velsicol 2,4-D Amine. Economical and effective against a long list of weeds in turf, fairways, aprons, tees and roughs.

CHLORDANE

for insect control.



Works above and below ground. Chlordane controls major insects that damage turf, both in soil, and on the surface. Also insects that bite or irritate people.

In years of use, Chlordane has proven highly effective as an all-around insecticide for lawns and turf. It controls turf-damaging insects such as armyworms, cutworms, white grubs, wireworms, larvae of several beetles, sod webworms, grasshoppers, crickets. It also controls chiggers, ticks, ants, spiders and others that ruin people's comfort and pleasure. One application generally provides effective control all summer long. Chlordane is stable in alkaline soils. Its tendency to cling to soil particles gives high immobility. Its acute dermal LD₅₀ is 500 mg/kg, and acute oral LD₅₀ is 457 mg/kg.

Liquid or dry formulations. You can get Chlordane in a wide choice of forms to meet your needs: 72% emulsifiable concentrate, 5% dust, 10% dust, 10% granules, or 40% wettable powder.

HEPTACHLOR for insect control.



Heptachlor is the preferred chemical, in many states, for controlling a wide variety of turf and lawn insects — including fire ants and tough soil insects.

HELPFUL INFORMATION.

Just ask us. Write for full facts on these leading turf chemicals. Ask about Accutrol® Air Emulsion Spray System for more accurate drift control. And watch for more new products on the way! Send card or letter today.

Before using any pesticide, read the label.



LANDFILL: One Alternative

"We are rapidly dissipating our land resources in metropolitan areas to the extent that sanitary landfills in many instances offer the only alternative for reclamation of recreational development sites."

—Buddie Johnson

Sanitary landfill areas can offer land-starved cities new sites on which to build golf courses and parks. That the "old city dump" must be eliminated, has been recognized by all levels of government. New regulations spurred by public pressure are forcing local governments to reclaim these offensive heaps for public use.

Sanitary landfill is an effective, economical and proven method for the permanent disposal of garbage, dry trash and combustible rubbish. The result of the process is a reclaimed site that can be used for recreational or industrial purposes. Basically, landfill is refuse that has been placed in a trench, compacted and covered daily with shallow layers of dirt fill. If done properly, the familiar problems of rodents, vermin, odor, insects and fire are eliminated.

We are a nation of ravaging consumers. It has been aptly stated that this country throws away more than most nations consume. Americans are now facing a crisis in the disposition of waste. The effects of waste disposal must be considered in light of an ever-lengthening list of relevant factors. Where will we put our waste? How will it affect our underground

Through sanitary landfill, this country can solve two of its pressing problems: disposition of waste and the creation of viable recreational land sites

by BUDDIE JOHNSON

NATIONAL GOLF FOUNDATION CONSULTANT
PACIFIC SOUTHWEST REGION

water supplies, and so on. Unless stricter controls are implemented to curb the proliferation of disposables of all kinds, the problem of waste disposal will become more severe. How will this country deal with this problem, and what will it mean to the golf industry?

THOROUGH PLANNING WILL
DO THE JOB

Tom Lowry, a civil engineer and recognized authority in the field of sanitary landfills, is convinced that the key is proper planning. "Every community should develop a master plan for growth. Each should decide where its sanitary landfills will be located and hopefully determine what it eventually wants to see there. The second step is to engage the services of qualified architects and waste disposal experts who will ensure that the best methods of operation will be carried out to meet that community's needs," states Lowry. His company, Harding-Lawson Associates of San Francisco, has demonstrated the value of this advice on many of their projects in

various parts of the world. Because real estate people use a different crystal ball than municipal planners, it is possible that landfill sites will wind up near residential areas. For this reason, the master plan must be flexible. The best planning procedures would include input from county officials. This has best been illustrated in San Diego County, where a 20-year master plan for refuse disposal has been completed, including two fills that eventually will be used for golf course sites.

Echoing most experts in the field, Lowry believes that the sanitary landfill is elementary engineering and in most cases poses no special problems. To be done economically and successfully, it should be handled like any other engineering project, which includes studies, drawings and specifications. The pre-planning is especially important if a golf course is planned for the site, because basic contours and elevations can be more easily engineered at the beginning.

Most cities have taken the problem of waste disposal too lightly. They have either burned their refuse, fed it to hogs or found a convenient hole in which to bury it. With not much more effort and money, refuse can be disposed of safely, without harm to the environment. Officials can gain knowledge from previous study data that indicate depth of fill, plan of operation, amount of earth fill needed, provision for proper drainage and the probable life expectancy of the site for fill purposes.

continued

Typical dump site before reclamation (left). Three-year-old landfill-created Monterey nine holer (right) is still serving Los Angeles' golfers.



The city of Phoenix has done an excellent job in this regard. The basic elevations were included during the fill time to meet the specifications of a proposed golf course on their Cave Creek Park site. Golf course architect, Arthur Jack Snyder, had already given to city engineers initial plans and specifications for the course. The golf course will cost less, because less top-fill will have to be moved for contouring.

The need for land is urgent, particularly around most metropolitan areas. This fact is clearly reflected in the tremendous shortage of golf facilities in and around urban areas. Officials of these city-suburban complexes would do well to imitate the actions of Phoenix officials by planning a golf facility, tailoring the fill to meet that use and present the plan to zoning officials at an early date. Even that task is not easy. Public officials in many cases must be super salesmen and must be able to overcome the public's bias toward "dumps." Oratory isn't enough; only facts and proper planning are a proper defense against this prejudice. Opponents will challenge the choice of certain areas. Thus a planner must know costs, projected population densities, future refuse needs and have a clear plan for the ultimate use of the site. In other words, he must have a well-thought-out and documented master plan.

One unique feature of sanitary landfill is that it is practical for a city of 2,000 or two million. In all cases, there are unique advantages: improved operation and environmental control of waste disposal; quality control, protecting the environment by preventing air and water pollution normally associated with disposal site operations; consultation of other public agencies and private consultants to develop better operating techniques, training or personnel, selecting and using equipment. All these lead to better economy and public service. What politician or public servant could ask for more?

Because sanitary landfills improve land, they can be located much closer to residential and industrial areas than was previously believed. It makes sense to locate them as close to the sources of waste as possible, because this cuts down on hauling costs. The most popular formula used in determining acreage requirements is expressed as "1-1-1." This simply

means that one cubic yard of compacted refuse for one person for one year is needed. Between 9,000 and 10,000 cubic yards of compacted refuse can be deposited in one acre per year, working to a compacted depth of six feet. Based on these figures, a town of 5,000 will require one-half acre per year, if the fill is to be done efficiently. In areas dotted with small towns, a county-wide system can be adopted. This system makes future recreation available to all inhabitants and each city could share in the costs.

COSTS ARE REASONABLE

A wide range of costs has been reported relative to sanitary landfill. The total cost of the fill is the sum of the land costs, plus site development, plus landscaping and improvement costs. Land for a landfill has ranged from \$2,000 to \$20,000 an acre in Los Angeles alone. Leasing land can cost from \$.04 to \$.50 per cubic yard of space used. Depending on the degree of compaction obtained, lease costs per ton range from \$.06 to \$.50.

The most recent purchase of landfill acreage by Los Angeles was \$2,000 an acre. The site has been planned for 2,000,000 cubic yards per acre with an average depth of 124 feet. It can easily be seen that by greater depth and more efficient compaction methods, much money can be saved. As for future land use, especially if a golf course is planned, the total site cost would be very small in proportion to the ultimate value of the finished product.

OPERATING FACTORS

There are two basic methods used to create sanitary landfills: the area method and the trenching method.

The area method is normally used in low or uneven areas. Refuse is dumped, compacted and covered in a gravel pit or gully. With this method, use of "cells" provides a systematic organization to the project. A cell is one day's deposit. Side by side, cells are repeatedly used to create level, usable expanses for eventual landscaping. In all area methods, enough cover should be extracted from adjoining slopes (or bottom of the working surface) to provide at least a six-inch layer daily and a final layer of at least 24 inches.

The trenching method, sometimes called the "cut and fill" method is used where level ground is available.

It has three variations:

1. The single progressive trench is dug for one day's refuse and cover material is obtained by further trenching;
2. The single trench is one long trench with excavated material windrowed on both sides to use for cover. Trench width should be twice the tractor width for best compaction;
3. The dual trench method uses one trench excavated the length of the site. After refuse is dumped, the cover material is brought from a parallel trench two or three feet from the first.

Perhaps the most notable problem of sanitary landfills is the production of methane gas. A by-product of the interaction between bacterial and organic material, methane gas has its most obvious effect on plant life. The Rancho San Joaquin GC in California's Orange County has eight-year-old trees that are stunted and huge expanses or grassy areas that have no grass. The gas in Phoenix's Cave Creek project killed the first 20 rows of an adjacent orange grove. Across from San Francisco, Alameda's second municipal golf course is dotted with pathetic trees, bushes and strangely colored grasses — all the result of methane gas poisoning. Coupled with such things as "bedsprings" rising out of the ground as a result of pool compaction, this golf course provides fun for only the hardy and non-discriminating player.

Methane gas tends to diffuse vertically, but has been known to travel horizontally by as much as several thousand feet. When this happens, the greatest danger is to nearby buildings. The gas enters along insulated water or sewer pipes to enclosed spaces beneath the building. Avoiding this problem is especially imperative if a golf clubhouse is to be built on landfill.

The most successful treatment of this potential problem has been that of engineers from the University of Washington on Seattle's Union Bay Landfill site. They used extensive piping to vent the gas and burn it at the surface.

From all present indications, sanitary landfills will be prime municipal golf course sites. It is also reasonable to expect that city governments will lease finished landfills to private developers for golf course construction. The problems are still

(continued on page 40)



Is Topsoil Necessary?

By DR. RALPH ENGEL
Cook College, Rutgers University

"Poor soil" often is the excuse for turf failure. And while we as turf growers realize this is an over-worked idea, we know that a lack of topsoil is often a handicap on sites where there is need to establish turf-grass. The topsoil may have failed to develop naturally; possibly, it was removed or reconstruction of the site and regrading may have dissipated the topsoil.

What are the consequences of no topsoil or very poor topsoil? The amateur may say that turf cannot be grown on subsoils, but we have learned that it is possible to develop good turf cover on most all subsoils. From my experience, I recall two New Jersey subsoils that I would avoid. One of these is the very acid, wet, black clay soil that we find between New Brunswick and the upper coastal region of New Jersey. This

soil will grow turf if it is properly drained and enough lime can be incorporated.

The fact that most subsoils will grow turf does not make topsoil unnecessary or undesirable. Its use reduces the chance of failure in turf-grass establishment and makes maintenance of established turf easier and less costly. When turf is established on subsoil, be on guard for such items as improper pH, need for extra fertilizer (especially referertilization), a poor physical condition that interferes with seedling establishment and additional need for watering during the first year or two. The use of a mulch over the seeding is more desirable on poor soils than good soils.

What are some of the disadvantages of topsoil? First, topsoil is com-
(continued on page 52)

The Fine Fescues

— Their Morphology and Behavior

By R. M. SCHMIT, C. R. FUNK and R. W. DUELL*

Fine fescues are noteworthy not only for their attractiveness, but also for their ability to persist in dry shade under trees and on acidic or poor soils where most other grasses deteriorate. This is why seed mixtures formulated for shaded areas usually contain large percentages of fine fescues. In addition, fescues survive better than most grasses on sandy soils which have low fertility and tend to dry out quickly.

Fine fescues have certain weaknesses. Prolonged summer heat, coupled with wetness, close mowing, and heavy N fertilization may result in 'die-out' of large patches of fescue in solid stands. Recovery of these dead patches is more limited than in Kentucky bluegrass sod, because most fescues do not regenerate from rhizomes to the same degree as Kentucky bluegrass. In fact, Chewings-type and hard fescues depend solely on tillering to regenerate and fill bare spots. This has been a major reason for including Kentucky bluegrasses with the fine fescues in turf mixtures. Summer losses of fine fescues are generally attributed to disease associated with high temperatures and wet soil conditions. It must be remembered, however, that management practices such as overfeeding with nitrogen and frequent close mowing increase disease problems.

Fine fescues in a seed mixture

also play an important role in the establishment phase as a 'companion' grass. Under good growing conditions rhizomatous fescues are quite vigorous and will provide a protective cover within 3 or 4 weeks. With high cut and low intensity management these will become a permanent component of the turfgrass area. Ryegrass, which has been used traditionally as a companion grass to assure rapid coverage, tends to be initially overly competitive against Kentucky bluegrass but later may fail to persist.

The fine fescues showing the greatest potential for turf use can be subdivided into four major types. They are referred to in this discussion as Chewings, creeping, spreading, and hard fescues. The Chewings, creeping and spreading fescues are currently included in one species, *Festuca rubra* L., commonly called red fescue. However, the three types are very different in appearance, growth habit, management requirements, adaptation, breeding behavior and, in part, chromosome numbers. The reproductive isolation which occurs between these groups as a result of differences in chromosome number and/or time of flowering indicates that each should be regraded as distinct species.

The Chewings-type *F. rubra* L. subsp. *commutata* Gaud., is fine-leaved, non-rhizomatous and low-growing. Under mowing, these plants may spread slowly by basal tillering. Where summers are cool, they will tolerate rather close mowing. In warmer areas where red fes-

cues are grown it is best to mow them at heights of 2 to 3 inches. A number of Chewings-type fescue varieties have been developed in recent years and have shown considerable promise in turf trials. 'Jamestown' is a dark green variety developed at the University of Rhode Island. 'Highlight' is a moderately light green, heavy seeding variety developed in the Netherlands.

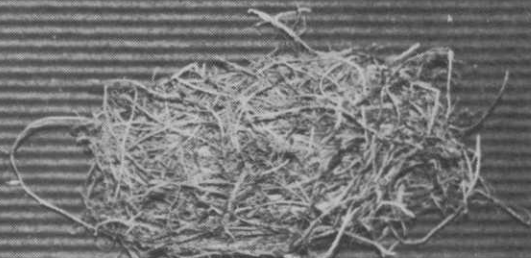
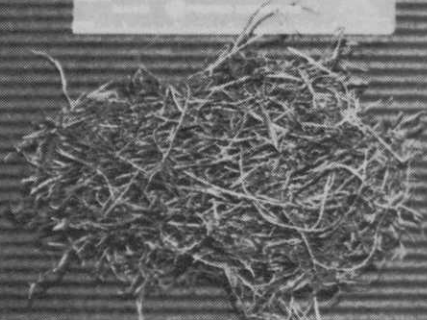
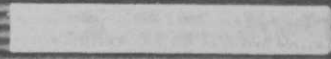
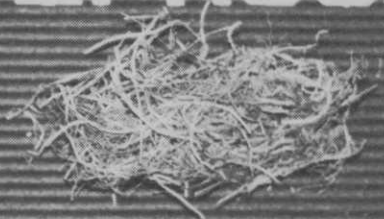
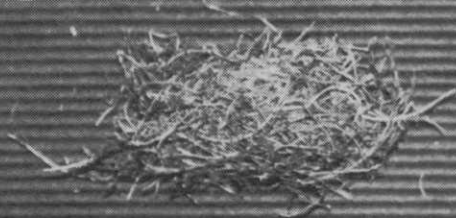
Most Chewings-types, including 'Jamestown' and 'Highlight', are susceptible to powdery mildew. Their dense growth habit makes these varieties more competitive and persistent in mixtures with Kentucky bluegrass than varieties formerly available. Persistence in mixtures may be enhanced by decreasing the amount of fertilizer or increasing mowing height.

'Banner', a Chewings-type synthetic developed at Rutgers is composed of 45 clones from the Northeast and is being tested at various locations throughout the U. S. and Europe. Its performance to date has been encouraging and indicates it is worthy to be released. Seed of this variety is currently being increased in Oregon. All Chewings-type fescues flower before or at daybreak in the nursery and appear reproductively isolated from rhizomatous fescues which flower in the late afternoon.

The creeping types of red fescue are currently regarded by European taxonomists as *Festuca rubra* subsp. *tricophylla* Gaud. The creeping varieties have 42 chromosomes, and flower in the late afternoon. They are represented by such varieties as 'Cumberland Marsh', 'Dawson', 'Golfrood' and 'Oasis'. They are

* R. M. Schmit is senior lab technician, C. R. Funk is research professor, turfgrass breeding and selection and R. W. Duell is associate research professor in grass physiology. All are associated with Cook College, Rutgers University.

DAWSON GOLFROOD



FORTRESS NOVARUBRA

'Dawson' and 'Golfrood' are examples of 42 chromosome creeping fescues which produce fewer and thinner rhizomes than 'Fortress' and 'Novarubra' which are 56 chromosome spreading fescues.

Table 1. Characteristics of Fine Fescues

Type	Species	Height	Spread	Leaf Texture	Chromo. No.	Hour of flower	Typical Varieties	Color
Chewings	<i>F. rubra</i> L. subsp. <i>commutata</i> Gaud.	low	v. little	fine	42	6 a.m.	Highlight Jamestown Banner	lt. green dk. green med. green
Creeping	<i>F. rubra</i> L. subsp. <i>trichophylla</i> Gaud.	med.	little	med.	42	2-4 p.m.	Dawson Golfrood	med. green lt. green
Spreading	<i>F. rubra</i> L. subsp. <i>rubra</i>	mod. tall	good	broader (like Ky. bluegrass)	56	3-5 p.m.	Fortress Ruby Boreal	dk. green dk. green dk. green
Hard	<i>F. longifolia</i> Thuill.	low	v. little	fine	42	6-8 a.m.	C-26	dk. green
Sheeps	<i>F. ovina</i> L.	low	v. little	wiry	28,42	12 noon	none available	blue-green



SOD

FOR
GREENS AND TEES

**PENNCROSS BENT
AND
TORONTO C-15 BENT
SOD or STOLONS**

—BLUEGRASSES—

*Adelphi *XL-100 BLEND
*Merion *KY-33 BLEND



4301 WEST FLOSSMOOR ROAD
TINLEY PARK, ILLINOIS 60477
312-798-2210

For More Details Circle (102) on Reply Card

IF...

**YOU OWN OR
OPERATE A:**

**Pro Shop
Golf Course
Driving Range
Par-3 Course
Miniature Course**

**... SEND NOW,
FOR OUR**

**New 1974 64-page
Wholesalers Catalog
of Golf Supplies**

Balls, clubs, club repair supplies, tees, mats, pails, markers, retrievers, golf bags, obstacles, ball washers, ball pickers, electric bug killers, ball striping & painting, supplies, grips, nets, shoes & accessories, umbrellas ... and more!



For More Details Circle (104) on Reply Card

fine-leaved, low-growing varieties with short thin rhizomes; and under mowing, they develop a turf appearance similar to the better Chewings fescues. Types such as 'Golfrood' have demonstrated good salt tolerance. Some of the most leaf spot resistant varieties are found in this group. The creepers are generally poor seed producers. Also, they may be destroyed by dollar-spot disease in New Jersey.

The spreading-types of fescue (*F. rubra* subsp. *rubra* L.) also flower in the late afternoon. They have 56 chromosomes, wider leaves, long spreading rhizomes and good seedling vigor. They are not as tolerant to close mowing and grow less dense than the creeping or Chewings-type varieties. Under New Jersey conditions, they have performed well in roadside tests when used alone or in mixtures with Kentucky bluegrass varieties. Their good seedling vigor makes the spreading fescues particularly valuable as a companion grass in the establishment phase. 'Boreal' and 'Ruby' are representatives of the spreading type fescues. A synthetic of six regionally adapted spreading fescues was developed at Rutgers in 1970. It is being tested at various locations under close and high mowing and it is receiving intensive study in New Jersey for roadside use. Early performance has been favorable and seed increase is in progress in Oregon for contemplated release as 'Fortress'.

The hard fescues (*F. longifolia* Thuill.) have received considerable attention since the development and release of 'Biljart' hard fescue in Holland (better known in the U. S. as Scotts C-26). Because of the success of this new hard fescue variety, turfgrass breeders in both the U. S. and Europe are collecting hard fescues from old turf areas and initiating breeding programs with this species. The better hard fescues produce a turf comparable in texture and growth habit to the better varieties of Chewings-type fescue, have a slower vertical growth rate, resist some diseases better, and offer adaptation to some poor soil conditions. The color of C-26 hard fescue is an attractive deep green that persists in spite of moderate drought. Cool season dormancy often persists well into midspring which may be objectionable. The hard fescues have weak

seedling vigor, fill in only by tillering, and appear to be rather slow to recover from wear and physical injury when grown in pure stands. Hard fescues flower in the nursery shortly after daybreak and the pollination season occurs prior to flowering of *F. rubra*.

The sheep's fescue types (*F. ovina* L.) are usually blue-gray in color. Their leaves are more prostrate than most grasses under mowing. The unusual leaf orientation and color contrast with other turfgrasses and contribute to heterogeneity as opposed to blending in mixtures. Sheep's fescues often predominate in shady or droughty areas that have been under low maintenance. This species flowers at mid-day (approximately) under New Jersey conditions and appears to be distinct and reproductively isolated from hard fescues. □

LANDFILL from page 36

many, but the technology exists to overcome them. The question now is, "Will we use it?"

SITE PLANNING CONSIDERATIONS

DO'S

1. Keep it convenient to refuse production centers;
2. Keep away from drinking and irrigation water supplies;
3. Consider possible future land use;
4. Consult state and Federal public health offices for assistance;
5. Use cover materials that are workable in all weather conditions and temperatures;
6. Take advantage of good public relations resulting from a shift to sanitary landfill program;
7. Use modern, efficient site equipment.
8. Plan to use secondary access routes to site.

DON'T'S:

1. Disturb natural drainage;
2. Locate on or near springs;
3. Locate on exposed rock strata;
4. Depend on clay or gumbo if avoidable;
5. Locate where access roads may be sometimes flooded;
6. Locate where trucks must be routed through residential areas.