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way is blocked off.

The human body when it is overworked, misused, and does not receive the proper nourishment becomes susceptible to diseases, ailments and nervous tensions. As a preventative we strive to remain healthy and keep our bodies in good physical repair. This is done by calling on the medical profession for assistance. If we're smart, we take an occasional rest.

Everything Has to Rest

There is nothing in the universe, natural or artificial, but what needs rest and periodic care for its survival and longevity. So why not give more consideration to the poor little grass plant, so often abused and forced to grow in an unnatural environment? Sooner or later golfers on overcrowded courses are going to be faced with the alternative of allowing for sufficient time for maintenance personnel to perform tasks required for good grooming and proper upkeep. Otherwise, they will have to tolerate inferior golf courses. That seems to be the only choice.

None of us want to have our members ask, "Why interfere with our golf?" Still, all of us desire to provide a well kept golf course, second to none. For this goal to become a reality and perpetuated, some control and regulation of play is a must. The solution should be a simple one; but it's full of complexities for the supt. and club officials.

Definite Schedule

A definite time for opening the golf course and starting play on weekdays (say 8:30 or 9:00 a.m.) is one answer. Such an arrangement would permit the daily putting green work routine to be well out of the way or finished before play becomes too heavy. The employment of more labor, plus the purchase of more time-saving equipment, helps to speedup operations and are a partial solution. A few clubs are resorting to night shifts, but this requires additional workers, added supervision, and consequently greater costs. The elimination of bottlenecks which require hand labor help to a certain degree by permitting the use of power machinery.

As many links are over-played a problem is presented to course architects calling for thought and study in light of

Are You Guilty of These Seven Deadly Sins?

The "Seven Deadly Sins of Supervisors" has been published by the Society for Personnel Administration, 1221 Connecticut Ave., N. W., Washington, D. C. 20036. Issued as a public service, and based on a new evaluation of supervisory problems, the leaflet lists the most frequent mistakes made in the handling of employees. Single copies are available, free, upon request to the Society at its Washington headquarters.

The seven deadly sins listed are:

1. Snap judgment in the selection of employees.
 2. Letting the job grow like Topsy (carelessness on the part of the supervisor).
 3. Failure to make assignments clear.
 4. Being a boss rather than a leader.
 5. Indifference toward disciplining and recognizing (rewarding) employees.
 6. Being too busy to train employees.
 7. Playing everything close to the vest (not communicating).
-

present day usage. Speed of play and ease of upkeep need to go hand in hand. Two putting greens for each fairway may be practical. Extra large or double tees afford an opportunity for over-used areas to be taken out of play, rested, and renovated, if necessary, without interruptions taking place. Perhaps, in the future new layouts will be built with both a tee and green at each end of the fairway. We must look for all possible solutions or somebody is going to get pushed off our golf properties.

Suggests Golf Stamp

The USGA has suggested to the Postmaster General that a commemorative golf postage stamp be issued this year. It would recognize three of the game's milestones: The 35th anniversary of Bob Jones' Grand Slam; The 70th anniversary of national championships conducted by the USGA; and the 180th year since golf was reportedly introduced to the U.S. (at Charleston, S.C. in 1786).



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Bloomfield Hills (Mich.) Country Club. “My Agrico Feeding Program started with a soil test that keyed the right fertilizer to meet particular soil needs.

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GRAU'S Answers to Turf Questions

BY FRED V. GRAU

What is Learned from Conferences, Consultations, Correspondence, Conversation

At no point in turf history have turf managers been more receptive to educational efforts. It seems that everyone is eager to absorb information that will be useful in developing high-quality turf. It is unfortunate that turfgrass conferences are attended by so few in the extension services. In the absence of up-to-date information from the extension people it is the product salesmen who attempt to perform the vital function of disseminating helpful information. Consulting services perform this function to a limited number of clients. Far too many are left high and dry, far from the source.

Golf Course Construction

At the recent Mid-Atlantic conference in Baltimore, I had the privilege of presenting H. B. Musser's paper on "Value and Need of Complete Golf Course Construction Specifications." Since then the Pennsylvania State University, College of Agriculture, Extension Service, University Park, has published "Guide for Preparation of Specifications for Golf Course Construction." The authors are Musser, J. M. Duich, and J. C. Harper. The Guide is available for a small charge. It would be a "steal" at \$10 but I believe that a dollar bill enclosed with a request for a copy would cover costs of mailing.

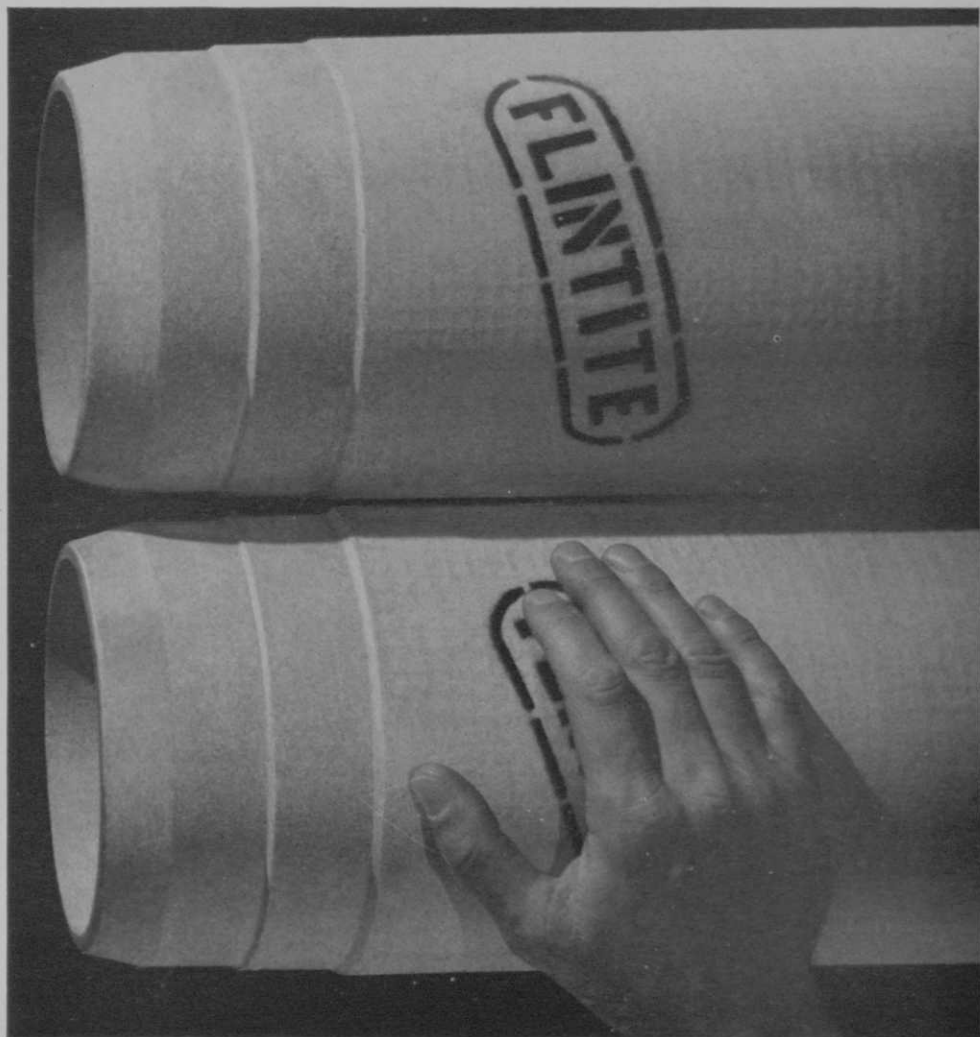
Many will remember the session at the 1960 Houston GCSAA conference when my panel discussed "Avoiding Built-In Headaches." The first part of the preface to the Guide reads:

"Many of the most serious problems encountered in maintenance of satisfactory turf on golf courses are the direct result of faulty construction. Failure to provide for adequate surface and sub-surface drainage of greens, poor root-zone mixtures that are subject to severe compaction, inadequate soil preparation on fairways, and shoddy seeding methods are among the 'built-in' mistakes that create future maintenance problems. These very often require major reconstruction or renovation to correct. Not only is this expensive but it also seriously interferes with normal use of the course."

In the Guide there are many blanks to be filled in. They represent decisions on the part of the architect, guided by his consultants and the superintendent. It is to be hoped that all Construction Committees at new courses will be made aware of the need for the Guide and its availability.

Chemical Weed Control

This heading is the same as the title of another Penn State publication, distributed at the annual Penn State turfgrass conference Feb. 15-18, 1965. Specific recommendations, based on exhaustive research, are given for more than 25 weeds that are found in turf. Warnings and limitations are given to guide the



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But FLINTITE is not all we have—we make a complete pipe package that includes PVC Plastic Pipe for intermediate mains or complete systems; SP Polyethylene Pipe for tee and green lines or par 3 courses; and Orangeburg® Underdrain for drainage of greens and fairway wet spots.

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What is a seed?

A seed may be described as:

- 1) a ripened ovule
- 2) an integumented megasporangium
- 3) a dynamic series of processes and conditions
- 4) a unique living system
- 5) a complex of biologic factors
- 6) an encapsulated micro plant
- 7) a growing plant in semi-dormancy
- 8) a suspended growth mechanism

The term "seed" implies a protected embryo, capable of germination, which can produce a new plant. A seed results from a stigma (female) being fertilized with pollen from an anther (male). The seed contains energy and "directions or information" that guide its subsequent germination and development, the exact biochemical nature of which remains unknown.

Seeds respire at very slow rates. Length of life varies with environment. Some common weed seeds produce plants after 90 years in the soil. Lotus seeds 2,000 years old brought from a lake bed in China produced plants that are blooming in Washington, D. C. On the contrary, hot humid holds of unrefrigerated ships caused nearly total death of fescue seeds brought from New Zealand.

Dormancy in seeds is critical, unique and poorly understood. No one seems to know why one cocklebur seed (two to a capsule) will germinate at once while its mate refuses to break dormancy and germinate until a year later.

Freshly-harvested Merion bluegrass seed stubbornly refuses to germinate for 30 to 40 days. A year later, seeds from the same lot will germinate as quickly as ryegrass.

Some seeds have germination-inhibiting factors in the *coloring* material of the seed coat (Coronilla). Untreated seeds that germinate 3 to 4 per cent may have 50-60 per cent germination after a 24-hour soaking. The reddish-colored soak water, when poured on other seeds, will inhibit germination and may kill seedlings.

Nature produces seeds in an infinite variety of sizes, forms, appendages, weights, shapes, colors and seed-coat textures. These differences make it possible to separate most weed seeds from crop seed.

There is mystery and romance in seeds which, essentially, represent life in suspended animation. Seeds present a challenge to anyone who desires a look into the unknown.

users of materials. It is this type of published information that should be developed and distributed by the various state and regional centers of turf information.

Until turf managers can learn to grow weed-free turf with improved grasses, soil amendments, modern fertilizers, fungicides and controlled irrigation, they will have to become better chemists in order to understand what it is that they are doing with powerful materials that are effective at mere ounces per acre.

It was only 114 years ago that the first commercial mixed fertilizer was made in Baltimore. We've had natural organic fertilizers ever since our agriculturally-minded ancestors started spreading the manure from their domestic animals, saving the blood from butcherings and scraping bird droppings off the rocks. Later came "waste" seed meals when we learned to press oil from cottonseeds, castor beans and soybeans. Lest anyone forget, it has been only a little more than a decade
(Continued on page 106)

GET GET

Cutting Height as Low as....

3/8" 1/2"

Frequency of Cut as Close as..

10 BLADE HIGH SPEED REEL: For the finer groomed creeping Bent in the North and the new improved fairway Bents and Bermudas in warmer climates.

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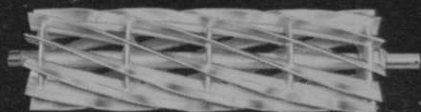
ELIMINATES SCALPING ON MOUNDS: The 26 inch cutting swath of each unit gives greater flexibility. No "ribbed appearance." Smoother, more uniform cut.

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At least two speakers and a panel at the recent GCSA convention pointed out the damage that can be done if golfers play through the winter at Northern courses, or if they insist on having their courses opened too early in the spring. A small amount of winter play may be tolerated, it was conceded. But it was generally agreed that with the onset of spring or good weather, turf is in its most vulnerable condition, and rushing the season may have injurious effects.

C. Richard Skogley, associate professor of agronomy at the University of Rhode Island, summarized opinion as to what happens when turf is subjected to medium or even light traffic too early in the spring when he said: "When alternate freezing and thawing are going on necessary soil granulation is taking place . . . If it is disrupted, serious compaction problems, that may persist through the season, can be induced . . . Turf is particularly vulnerable when it is coming out of the dormant stage . . . Grass blades are more easily damaged

at this time than any other . . . Turf in the early spring is struggling for a foothold and, too, it is recovering from winter damage and needs a warming period in which to recuperate."

Supts., of course, have been aware of these things for many, many years. But too few of their members realize what takes place at the time when the grass starts to come back. Some are indifferent, of course, but the majority will recognize the wisdom of closing the course or keeping it closed when it is explained to them why turf can be damaged during the trying days of early spring. Anthony J. Stranzel, supt. at Indian Valley CC, Telford, Pa., recently suggested to Fred Grau that if Golfdom were to carry a notice such as appears below, it could be posted on club bulletin boards and members could be informed as to why it is necessary to keep the course temporarily closed.

Copies of this notice, written by Grau, can be obtained by writing to Golfdom.

Course Closed Temporarily

In the interests of all the members, and in an attempt to preserve the high quality of our greens, the course is closed to play until conditions warrant resumption of traffic.

Foot and wheel traffic on frozen grass causes the grass to turn brown and die. Ice crystals within the grass blades are distorted and rupture living cells, causing death.

When the frost is thawed by the warm sun the surface of the greens remain overly-wet for a short time. In this condition foot traffic can cause severe damage by breaking roots, creating compaction, and footprinting so badly that pleasurable putting is not possible.

Every effort is made to keep the course continuously playable, but when Nature fails to cooperate and brings frost or floods, we have no choice but to limit play. The understanding and consideration of the members are greatly appreciated.

The Golf Course Superintendent



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If what you seek is putting green perfection with less future trouble, plant stolons. Make certain that the stolons you plant were grown on sterilized soil and are free of wild bent and poa annua.

FOR THE FINEST GREENS POSSIBLE AT THE LOWEST PRICE POSSIBLE PLANT

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A leading turf expert stated recently, "Now that the quality of turf developed from commercial Penncross seed seems to be deteriorating (production fields appear to be left down too long) turf men are looking to the old standard stolons."

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- "Construction and Planting of Putting Greens with Creeping Bent Sod or Stolons."
- "Genetic Variability in Creeping Bent" A study of seed versus stolons for planting putting greens.

Club Name _____

Address _____

City _____ State _____ Zip _____

Superintendent _____

5 More Points to Consider In Planning A Course

By **GEOFFREY S. CORNISH**

Golf Course Architect, Amherst, Mass.

In the first part of this article, which appeared on pages 31-33 of March GOLF-DOM, Geoffrey Cornish pointed out that the worst mistake that can be made in starting any type of course is inadequate financing. Cornish went on to suggest that municipal courses do not really offer competition to fee-type courses. He also suggested that developing non-equity clubs has its risks but that such operations are usually successful. Membership capacity for such private and semi-private non-equity courses usually reaches 300 before enlargements and improvements are necessary. — Ed.

5. Are golf courses effective as adjuncts to other business?

Courses are useful adjuncts to hotels, motels and real estate developments. In New England ski areas, numerous courses are under construction or have recently been built to attract vacationers to these areas in summer months. The experience appears to be universal that a good golf course serves the purpose of attracting people to all these places. Moreover on their own these courses often return a profit on the investment.

6. What is the future of the Par-3 course?

The Par-3 course for day play or flood-lighted is perhaps the least exploited for profit of all golf features in the North. While a Par 3 can never be a substitute for a regulation layout, it can appeal to almost all age groups and all types of golfers. For a good return on investment, its design must call for nearly every club in the bag. Furthermore, it must be im-

Second of Two Articles

pressive in appearance and be maintained in near perfect condition.

7. Why is more acreage required for regulation courses than formerly?

Some older 18 hole courses, including several famous layouts, occupy as little as 100 acres of land. The modern 18 requires considerably more. Today's golfer is perhaps no wilder than his father but there are many more of them. This factor alone requires more space between fairways and wider buffer zones along property boundaries. Also, a huge practice fairway of 7 to 12 acres is a must.

While many golfers prefer to play a relatively short layout, all great courses need longer yardages for tournaments and visiting professionals. The majority of new layouts have a championship yardage of 6700 to 7000 yards or more. But with long or multiple tees, the course can be adjusted to less than 6,000 yards for women and from 6,200 to 6,500 for men's regular play. The long yardage is another reason why greater acreage is required than formerly.

8. What type of layout is the greatest success?

For many years it was obvious that the short easy course was the best moneymaker. Indeed numerous fee type courses were made into virtual race tracks to get the most players possible over them in a day. This type of course is indeed still a moneymaker and, no doubt, brings enjoyment to millions and attracts many newcomers to the game. But today the type of course that is enjoying even larger profits is the one embodying all the features of country club design and the highest standards of maintenance.

This type of layout has long or multiple