

Operation putting green

Besides covering all matter connected with the greens, this year's meeting saw yet another superintendent given the USGA Greens Section Award.

by Desmond Tolhurst

This year's USGA Greens Section conference on golf course management was held on January 26 at the Biltmore Hotel in New York City. The topic was the putting green—from design to maintenance.

After the introductory remarks by Henry H. Russell, chairman, USGA Green Section Committee, the morning sessions got off to a fine start with a talk by William C. Campbell, 1964 U.S. Amateur Champion. Mr. Campbell discussed what the golfer expects the putting green to be.

He pointed out that greens—and tees—are getting so good these days, that we might try what is done at St. Andrews, Scotland, for winter play, that is, play from green to tee. He also noted how important putting, percentage-wise, is and quoted Ben Hogan's remark that golf is actually two games: one is played in the air, the other on the ground. They are quite separate and have little in common.

On size of greens, Mr. Campbell came out against the modern obsession with large greens, saying that they were not only costly to construct and maintain, but put too much of a premium on putting. He conceded that on long par three's and par four's, larger greens were needed. They were also necessary, he said, on courses where heavy play necessitates having many different cup positions to equalize wear.

Mr. Campbell pointed out that



James L. Haines receives USGA Greens Section Award from Wm. Ward Foshay, of New York, USGA President.

one factor too often overlooked in greens design is the prevailing wind. For example, slopes on greens should not be so steep that the wind can blow a ball hit from a trap onto the green right back into the trap, as had happened to him in actual tournament play! He also inveighed against monotony in greens design. A square green, elevated above fairway level, and sloped from back to front for drainage may not be so bad in itself, he said, but on some courses, they are all like this.

Creative use of the immediate area surrounding of the green was recommended by Mr. Campbell. It should not be as easy to play a shot from off the green as on the green. Swales and mounds around the green can make getting down in two from off the green a matter of golfing skill rather than routine shotmaking.

In this connection, Mr. Campbell cited Pine Valley's No. 10, where the slope of the green favors a deep little pot bunker—certainly a devil of a hole! He also mentioned the

great ground formation around Augusta's ninth green, and the dip short, the bunker left, and the swale at St. Andrews' 17th, the famous "Road Hole," as examples of what he considered good design.

The only large greens Mr. Campbell said he liked were large, terraced greens. This was not inconsistent, he claimed, as this type of green is in reality two greens in one. The only proviso he stipulated was that there should be enough room on both levels for pin locations. There should be, he said, at least five to six feet of relatively flat ground around the pin.

Mr. Campbell expressed a preference for greens that are firm to pitch to, and fast to putt. As regards grain, he thought that this was not too bad as long as all the grain lay in the same direction. But when you find on one green that the grain goes in four different directions, this is just too much! A line should be drawn between the challenging putt and the unfair putt.

Campbell concluded by saying that he favored a putting ball. This might seem like sacrilege to some, he said, but, with all the liberalization in the rules, why not?

The next speaker was Dr. Marvin Ferguson, mid-continent director, USGA Green Section, whose topic was green design. He emphasized that good golfing conditions and economical maintenance are not incompatible, and went on to agree with the previous speaker on the subject of large greens, but from the maintenance angle.

Superintendents don't like the larger greens, he said, because of the inordinate length of time it takes to mow them. Over the nation, the average time taken to mow a green is 35 minutes (around 6 minutes per 1,000 sq. ft.). When greens are as large as 12,000 to 15,000 sq. ft., the time taken to mow each green soars to just over an hour to an hour and a half. This can get pretty un-



Dr. Marvin Ferguson, mid-continent director, the USGA Greens Section.

economical, Ferguson claimed, in terms of the man-hours needed and escalating wages.

Of course, when greens are too small, another problem arises. Assuming you wish to cut the hole no nearer than 12 feet from the edge of the green, you will encounter a marked shortage of areas available for pin placements.

Some slope, Dr. Ferguson said, is desirable on a green to provide surface drainage. Sharp breaks, however, do prove difficult to water. A green does not have to be wet to hold a shot—contrary to popular opinion—as long as the soil is mixed properly underneath its surface. With a proper soil mix, you can keep the green drier and discourage *Poa annua*. Such a green will hold a shot, and resist footprints.

Dr. Ferguson wound up his talk with a plea to course designers to keep golfer challenges and the future maintenance of the greens in mind when at the drawing board. Neither should be neglected, and neither need be sacrificed to the other.

The next item on the agenda was a new movie made by the USGA Greens Section in cooperation with Clemson University entitled, "The ABC's of putting green construction." This covered thoroughly the building of a golf green according

to USGA specifications. (Enquiries about the film, and a booklet on the same subject should be addressed to the United States Golf Association, 40 East 38th Street, New York, N.Y. 10016.)

Immediately following the movie, there was a panel discussion on greens construction and materials by three of the USGA Green Section agronomists. James L. Holmes was moderator, and Holman M. Griffin and James B. Moncrief were the panelists.

All three agreed that the movie gave the USGA specs well. Holmes observed that they had thought at one time that surface drainage was not so important if you could guarantee soil permeability with a green built to proper specifications. However, this is not true. You still need good surface drainage.

A novel method of coping with water holding depressions in greens was also discussed. Using a chain saw (equipped with an old blade for this one time use), cut slits eight inches deep and 3/8 inch wide on the problem area. A herringbone pattern is very satisfactory. Fill the slits with calcined clay. The wounds in the ground grow over in 10 days to two weeks, and this method drains these pockets very well.

Holman Griffin then pointed up the importance of off-site mixing. He also stressed how vital it is to give equal consideration to aesthetic, agronomic and architectural factors in golf course work.

Bentgrass greens are moving further south every year, said James Moncrief. Nevertheless, it is just as vital to use good construction with the bermudas as well as the bent. As he pointed out, the old adage that the three most important elements in good greens construction are drainage, drainage and drainage, is just as true in the South as elsewhere. He also cautioned at cutting corners during construction. What usually happens is that you have to go back in a few years

Continued on next page

Putting green

Continued from preceding page

and start over again.

The panel concluded its session by pointing out that if you use USGA specs to construct greens you can control the work of the contractors. You can prove they have done the work right or wrongly. They also observed that while you must water frequently with a green built to USGA specs, it is not true that it needs more fertilization than greens built in other ways.

The next session was entitled "Grasses for putting greens." Alexander M. Radko, Eastern Director, USGA Green Section, lead off with a discussion on the popular strains of bentgrasses.

Of the seeded varieties, he said, Seaside makes a very fine putting green. Penncross, a true creeping bent, can become "fluffy," if not properly managed. In the velvets, there are only a few selections. The latest, Kingston, from Rhode Island, produces dense, upright turf, but does have a tendency to thatch. He stated that while S. German seed is now again available, it is not so good as it contains Seaside as well.

Of the vegetative selections, Radko pointed out, Arlington tends to swirl, with the grain growing in all directions. Congressional is traffic resistant, he said, while Collins is now scarce. Cohansey has a light green color, is upright and aggressive and is adapted to the southern regions of bentgrass growth. Nimisila, from Ohio, does as well in the South as the North, and has a dark green color. Washington has only one drawback—it turns purple in cool weather.

Radko also talked about the light green color of Old Orchard, the rarity and graininess of Metropolitan, and the Penn State varieties, Pennlu and Pennpar. He thought we would see more of Evansville shortly, and touched on the velvets. He wound up his talk by showing slides of the grasses discussed.



Left to right, Richard Craig, James R. Fulwider, Edward Roberts, Jr., and William Bengeyfield.

James B. Moncrief, USGA Green Section agronomist from the Southeast, then rose to discuss Bermudagrasses. Common came in, he said, after 1751, but it was not until 1945 that Dr. Bair selected the finer bladed bermudagrasses.

He observed that Everglades is quite cold tolerant and resists scuffing better than other selections. Bayshore, a medium green grass, he said is fading out at this time. Tiffine, a light yellow grass introduced in 1953, is now being replaced by newer selections. However, it does see use as collars on bent greens, because bent can resist Tiffine. This grass is mainly seen now in the area in which it was originally selected.

Tifgreen was used more than any other bermudagrass, Moncrief said, but it had difficulty in the Transition Zone between bents and bermudas. (There was an increase of three per cent of bent over Bermuda planted last year in the Transition Zone.) Tifgreen is a vigorous grass, he pointed out, and withstands traffic well. It tolerates 1/4-inch mowing, and 3/16 inch is possible if you are on your toes.

Tifgreen is now being replaced by Tifdwarf, said Moncrief. This is a mutation from Tifgreen, released in April, 1965. It was used in 90 per cent of Bermuda plantings last year—on 40 to 50 courses



William C. Campbell, '64 Amateurchamp.

in the Southeast alone. The problem peculiar to Tifdwarf is that below 50 degrees, it has a purplish cast.

However, Tifdwarf is superior to Tifgreen in most every way. It is one step along the way to the ultimate goal—to create a bermuda that will compare with the best bentgrass. This "perfect" bermuda, Moncrief said, should tolerate 3/16 inch mowing, and not go off color in cold weather. The only drawbacks to Tifdwarf are those it shares with other bermudas—it is susceptible to nematodes, and it also must be overseeded.

Moncrief concluded by talking about the varieties used for overseeding. Originally, ryegrass was the only one used. Unfortunately,

Continued from page 84

Putting green

Continued from page 50

ryegrass is too competitive in spring—just when you want to lose it! However, there are new ryegrasses in use that show promise. Bents have also been used for overseeding, Moncrief said. *Poa trivialis* is among the best.

The next item on the agenda was a panel discussion on turf establishment. William H. Bengeyfield, Western Director, USGA Green Section was moderator. Panel members were Lee Record and Holman Griffin, USGA Green Section agronomists.

Mr. Griffin discussed the fundamentals of seeding such as seeding rates, seeding methods, and topdressing and rolling for firm contact with the seed bed. Different types of mulches were described, and the necessity of having no traffic over the newly seeded greens for about three weeks.

On stolonization, Mr. Bengeyfield showed a sound-synched slide presentation. This featured Ken

Moore, superintendent at the Rancho Bernardo CC, San Diego, California. Ken has stolonized 30 greens and says that stolons come through faster and finer. He thinks it best to distribute stolons by hand, and gives them their first cut when they get to 1/2 inch. He fertilizes them with a heavy rate of organic.

Lee Record then discussed bringing new greens into play. Water is critical to success, he said, and a sharp mower. For the first two weeks, he recommended using a hand mower. Topdressing is also needed early on new greens—use the same sterilized top mixture you used during construction. Preventative fungicides and herbicides should be applied as well as a complete fertilizer. Record pointed out that many new greens were ruined by too early play. Also, that sandy soil bases took longer to be ready for play than bases composed of heavier soils.

After lunch came the presentation of the USGA Green Section Award. This award is presented annually for distinguished service to golf

through work with turfgrass.

This year, the recipient was James L. Haines, who has been superintendent at the Denver CC, Denver, Colo., for 40 years. One of the pioneers in turfgrass work, Mr. Haines helped evaluate bentgrasses in cooperation with Dr. John Monteith, Jr., who received the first Green Section Award in 1961. He also developed a machine for pruning roots of trees and a leaf rake. He was directly responsible for the organization of the Rocky Mountain GCSA, and served as its first president.

The award was presented to Mr. Haines by Wm. Ward Foshay, of New York, USGA President.

Mr. Bengeyfield then introduced the next speakers, who were going to discuss the topic, "Maintenance of greens—how, when, why." They were: Richard Craig, superintendent, Camargo CC, Cincinnati, Ohio; James R. Fulwider, superintendent, Century CC, White Plains, N.Y. and Edward Roberts, Jr., su-

Continued on page 86

LINDIG ... For Full-Circle Preparation Of Soil

1 B/2 B Shredder

K-10

L-25, L-40, L-60

CL-75, CL-125, CL-200

Treatment Cart and Steam Aerator

D-15

Lindig Shredding and Screening equipment processes wet or dry materials and removes unwanted debris. Exclusive Hammermill action maintains uniform texture for "topgrade" soil. • For the best quality and most productive soil obtainable . . . look to Lindig's Complete "Soil-Service Systems." The Lindig Soil Cart and Aerator provide the correct low temperature of 145° to 165° which destroys harmful elements without damaging beneficial bacteria. • There are models available to economically fit your specific requirements.

• SHRED • AERATE
• SCREEN • MIX
• TREAT

For additional information and free literature write:

Lindig
EARTH PROCESSING EQUIPMENT
MANUFACTURING CO. INC.

1875 WEST COUNTY ROAD C • ST. PAUL, MINNESOTA 55113

For more information circle number 226 on card

Putting green

Continued from page 84

perintendent, Canoe Brook CC, Summit, N.J.

Mr. Craig kicked off by discussing the height, frequency and technique of mowing. The reason for mowing, he said, was to produce a true, rolling surface. You are trying to get the millions of grass plants to stand up in a dense form so that you only mow the tips.

Mowing heights vary between 3/16 and 5/8 inches, he said, with 1/4 inch being normal. With bentgrass, he observed, if you mow much lower than 3/16 inch, you cut into the grass plant itself. Mow longer than 5/8 inch, and you encourage the bent to lie down too much when it is rolled by the mower roller. On frequency, Craig said the only way to produce a true putting surface is to mow every day with a sharp mower. The only exception to this is not to mow when it is cool, and there is no growth.

Mr. Craig explained his technique

of having all his men mow along the direction of play on Monday, for example, then change in a clockwise fashion every day. This way, he says, you can check that your orders are being carried out, as all the men should be mowing in the same direction relative to the direction of play on any given day.

The importance of the correct technique on the turn was emphasized. Craig said he had seen many aprons damaged by men turning abruptly on the apron instead of making an easy pear-shaped turn 15 feet off the green.

Craig advocated the use of a brush or comb as being the easiest way to get the grass to stand upright. He said he used one every day except weekends, or when it was hot and bruising could result. Lapping the mowers was most important and should be done every two to four weeks.

The reason for vertical mowing, Craig explained, was first, to get bentgrass to grow up straight, second, to reduce thatch—you need a little thatch, but not a lot of it and

third, it keeps your grass young by cutting out the older runners and stimulating new and healthier growth. You can do it whenever the grass is growing, but never when it is too cool for the grass to grow. You must always fertilize afterwards to let the grass recover.

Against grain problems, you use thinning or light vertical mowing. This can be done any time in the year except in very hot weather when bruising might occur. Knives should be set from 5/16 to 1/2 inch apart, down to the level of the first runner. You can't go too deep, or the grass will be completely defoliated.

Craig emphasized how important it was for the superintendent to be physically present when vertical mowing was being done. He must not leave it to his men to do on their own. He must also supervise when the vertical mower was being started on the next and other greens, as each green could need individual treatment.

Deep vertical mowing is done to eliminate thatch. Blades should be

Continued on page 90

THE ORIGINAL SELF PROPELLED SPIKER



Fewer working parts
therefore, less maintenance cost.

Hundreds now in use all
over the country.

WHY BE SATISFIED WITH LESS THAN THE BEST?
POWER SPIKE MANUFACTURING CO.

113 E. Colorado •

WALTERS, OKLAHOMA

• Area code 405 - 875-2307

For more information circle number 242 on card

Coming events

Club Managers Convention,
Bellevue-Stratford Hotel, Philadelphia,
Pennsylvania, March 5-9.

University of Massachusetts Annual Fine Turf Conference, White House Inn, Chicopee, Massachusetts, March 6-8.

PGA Business School, Plaza Hotel, Kansas City, Missouri, March 17-22.

38th Annual Michigan Turfgrass Conference, Kellogg Center, Michigan State University, East Lansing, Michigan, March 20-21.

2nd Rocky Mountain Golf Management Seminar, Cherry Creek Inn, Denver, Colorado, March 18.

7th Annual Florida Turf-Grass Trade Show, Jack Tar Harrison Hotel and the Belleview-Biltmore Hotel, Clearwater, Florida, April 24-26.

NEW ENGLAND HEADQUARTERS

BUCKNER Sprinklers
BUNTON Mowers
CYCLONE Spreaders
E-Z-GO GT 7 Trucks
FOLEY (Modern) Grinders
GIANT Blo & Vac
JARI Power Scythes
LINDIG Shredders
MILORGANITE Fertilizer
MOODY Automatics
RYAN Turf Tools
THURON Power Sprayers
TORO Mowing Outfits

THE Clapper Co.

1121 WASHINGTON STREET
WEST NEWTON 65, MASS.

For more information circle number 202 on card

Putting green

Continued from page 86

set around 1/2 to 3/4 inch further apart. You must aim to go right through the thatch—don't go half way. After deep vertical mowing, topdress the green to smooth out the turf.

Craig warned against deep vertical mowing in two directions. Great chunks of green come out and it takes months for the green to recover. To remove the resulting litter, he said the best method he had tried so far was the air broom.

The next topic was cultivation, handled by Edward Roberts, Jr. He said he relies almost entirely on an aerifying machine to get the root structure the way he wants it and allow water and air to penetrate. He tries to plan his work with the golf schedule in mind and get the aerifying machine out there when golf play is at its lowest ebb.

Roberts said he aerifies in spring and late summer. When a green has good topsoil structure, then he

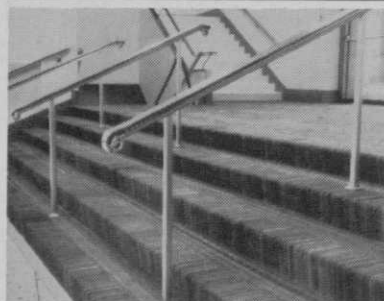
uses the plugs as topdressing. On greens with poor topsoil, he removes everything and comes back with other topsoil to topdress. Some greens, he added, need aerifying more than twice a year. For example, those greens in a pocket thin out and crust—these he aerifies twice during the summer.

On the subject of slicing, Roberts said he only did a very limited amount. About the only time he did any was during stress periods, or when crusting develops.

Roberts believed in use of vertical mowing in late summer to take as much out of the old grass as you dare. Then aerify, fertilize and topdress, thus forcing young growth to come along before winter. In October, Roberts applies gypsum to his greens—about 40 lbs. per thousand sq. ft. Although he could not give an explanation for this procedure, he did say that all he knew was that it works, especially on problem greens.

Fulwider observed that he aerifies

Continued on page 93



**GUARANTEED THREE YEARS AGAINST ALL TRAFFIC!
HANDSOME, LASTING FLOORCOVERING
ECONOMICAL TO INSTALL—MAINTAIN**

FUTURUS GOLF CLUB CARPETILE



Check FUTURUS with ALL others:

- ☐ Absolutely SAFE and SKIDPROOF—wet or dry.
- ☐ HIGHLY RESISTANT to heavy spike shoe traffic.
- ☐ Women's spiked heels DO NOT penetrate its surface.
- ☐ NOT AFFECTED by exposure to fresh or salt water.
- ☐ EASILY INSTALLED by anyone—Cleans readily.
- ☐ Indoors or Outdoors—completely WEATHERPROOF.
- ☐ Neutral color tones BLEND with any background.
- ☐ STAIRWAYS—Safest, Most Durable of All.

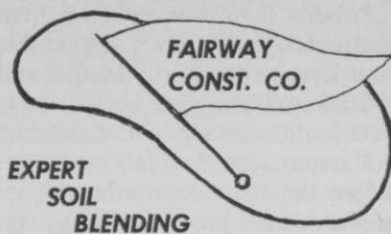
Made from selected nylon cord heavy duty tires—buffed to chenille-like finish. Strips 3/8" thick are bound to glasscloth impervious to moisture... then cut to 12"x12" tiles. Used successfully throughout the country for other recreational and commercial purposes.

For further information, prices—and USER-PROOF of FUTURUS Carpetile service satisfaction—write:

FUTURUS, INC. 1076 West Ninth Street
Upland, California

U. S. Patent No. 3,352,733

For more information circle number 201 on card



OLD OR NEW
CONSTRUCTION
GREEN FAIRWAY
IRRIGATION

OVERLAND PARK, KS., P.O. BOX 4306 NI 8-4900
PHOENIX, ARIZ., 55 EAST THOMAS 266-6631

For more information circle number 156 on card

MANUAL & AUTOMATIC TURF IRRIGATION

Design—Installation
Complete Pumping Installation

SKINNER/BUCKNER/J-M
PVC/TRANSITE/RAINBIRD

Alcoa Aluminum Portable Pipe—Pumps
RENTAL & SALES

OLDFIELD EQUIPMENT CO.

430 W. Seymour Ave., Cincinnati, O. 45216

Phone: 821-5582

For more information circle number 184 on card

COMPLETE GOLF COURSE CONSTRUCTION

Also rebuild, move tees and greens, install
watering systems.



IBERIA
EARTHMOVING SERVICE, INC.

IBERIA, OHIO • Ph. Galion, O. 419 468-5454

For more information circle number 185 on card

TAT

GOLF COURSE SIGNS

Extremely smart looking signs
with self fastening stakes.

Signs 50c & 75c
Stakes 25c & 30c

Shipped in 24 hours
Write for Free Brochure

TAT GOLF SIGNS
BOX 1, DUNEDIN, FLORIDA 33528

For more information circle number 236 on card

Putting green

Continued from page 90

in spring and fall, but didn't think it necessary to do it every year. He does it, he said, when he feels the greens need it—don't just aerify for the sake of aerifying. Craig said he used the spiker every other week from June through August to keep the green center (cupping area) in good condition. Benegfield cautioned against aerifying too early in spring or late in the fall. This, he said, let the *Poa annua* in.

Mr. Fulwider then discussed topdressing. This practice is very important, he thought. He topdresses regularly to keep the putting surface good. On prepared mixtures, Fulwider emphasized the importance of quality and consistency. He conceded that such mixtures are expensive.

Fulwider tries to topdress every three or four weeks in the growing season. The amount of topdressing varies, depending on the grass, but light, frequent applications work out well. Don't forget care of the mowers, he said, when you topdress often.

Fulwider uses steel drag mats after topdressing, then the green is raked over and watered by hand. Proper watering in is most important, he thought.

If you are going to do a lot of topdressing, Fulwider said, take the time and money to do it properly, including having adequate storage facilities. He also recommended that the superintendent should have one day a week to play golf—it's the only way, he said, to appreciate the course from the member's point of view.

Roberts asked how much play Fulwider had on his course, observing that he (Roberts) had too much play on his course to topdress as much as Fulwider does. Fulwider replied that he had little play during the week. Also, that this practice had been going on for years, and his members were used to it!

On the subject of fertilizing, Fulwider said that, although it was a very common practice, it was still not standardized. Research was still needed in this area.

The trend, at least in the Northeast, was toward lower fertilization, especially of nitrogen. Super-

Continued on page 94

Better Seedbeds - Fast

...use PIXTONE

THE PROVEN MECHANICAL STONEPICKER
Revolving arm and rake design picks all stone to
9 inch diameter—pulverizes, aerates and returns
soil in ideal condition for seeding. Sod develops
faster and sturdier



—Contact manu-
facturer for more
details.

BRIDGEPORT
IMPLEMENT
WORKS, INC.

Box 491G
Stratford, Conn.
06497

For more information circle number 203 on card



COLONIAL GARDENS
GOLF COURSE CONTRACTORS

write or call: W. W. Ullman, Consultant
COLONIAL GARDENS INC.
P. O. Box 435 • Marietta, Ohio 45750
Phone — 614 373 2188

For more information circle number 166 on card

PRO SHOPS — FULL LINE GOLF EQUIPMENT

Midwest Distributor
Munsingwear
Altmann of Vienna Sweaters
Gulfstream Slacks
ProGrip Gloves
Kingslaw Prince Carts
Louise Suggs Ladies' Wear
Velvet Touch Putters

Write for catalog

GREAT LAKES GOLF BALL CO.

4527 Southwest Hwy.
Oak Lawn, Ill. 60453

For more information circle number 227 on card

GOLF

NATION-WIDE DISTRIBUTORS
FOR OVER 30 YEARS

OF

GOLF SHOP-DRIVING RANGE
PAR 3 & MINIATURE COURSE
SUPPLIES

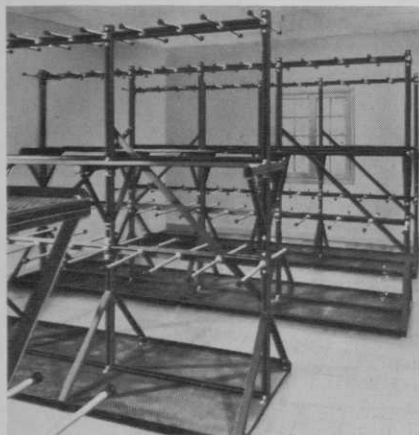
SEND FOR CATALOG:

NORTHERN
GOLF BALL CO.

2350 W. ROSCOE ST.
CHICAGO, ILLINOIS 60618

For more information circle number 237 on card
GOLFDOM/1968 MARCH • 93

The finest... BUY BAG RACK



It's the favorite of hundreds of the finest clubs throughout the nation.

They like BAG RACK because it provides safe, convenient, neat storage. They like the way BAG RACK keeps members' bags visible, vertical and ventilated. They like BAG RACK'S versatility. It's completely adjustable in height and width for larger or smaller bags. They like BAG RACK because they can choose from overhead support, free standing or single entry installations. You'll like it, too.

Send us your letterhead. We'll see that you get detailed information and prices without delay.



A product of
NORMAN G. COPLAND
& Associates
DIVISION OF STEEL SASH SERVICE, INC.

1300 Rand Road, Des Plaines, Ill. 60016
Telephone (312) 299-7734

For more information circle number 200 on card

Putting green

Continued from page 93

intendents had found there was less trouble with "hungry" turf than with over-fertilized turf. Fulwider thought a "happy medium" was necessary somehow.

His own program called for using fertilizer in a 3-1-2 ratio at 3/4 lb. per thousand sq. ft. in April and mid-September. He uses five lbs. of nitrogen per thousand sq. ft. total for the year. However, he advocated the use of soil tests as a guide to the proper program at any course.

Craig commented that he was on a "potash kick" right now, especially in high traffic areas. Roberts stated that his biggest problem was *Poa annua*. By decreasing phosphorus, he takes away just what *poa* likes. He uses eight pounds of nitrogen per 1,000 sq. ft. per year. Benguefield added that too many older superintendents ask, "What have they done to ammonium sulphate?" This points up the necessity of changing your source of nitrogen occasionally. Use one type all the time and you get diminishing

returns, as time goes on.

Roberts then described his own particular preventive program. He uses Dyrene during the second and third weeks in May at weekly intervals, with more applications against dollarspot and *Helminthosporium*. When the thermometer hits 80 degrees, and it's humid, he stops Dyrene and uses thiram and PMA, and stays through the summer on this. If there's a possibility of copper-spot, he uses Cadminate. He also said he changes drastically to other products once in a while.

He goes back to Dyrene in the cool months, then in the last week of November or first week in December he uses Caloclor against snow mold. Roberts described a visit to Dave Moote in Canada and illustrated this with slides. He said that Moote believes we have been looking at snow mold at the wrong time. He feels that snow mold is very active in October, and that is the time to use Caloclor.

As regards insects, Roberts said he used heptachlor three times a year—let the birds tell you the right time to do it. His biggest weed, he stated, was *Poa annua*. The most



LIQUID-LUSTRE GOLF BALL WASH

Costs as little as 2c per washer per week

- Keeps golf balls SPARKLING WHITE... Golfers satisfied!
- Perfectly safe for washers... either hard or soft water!
- Will Not cause RUSTING!
- No unpleasant odor—Ever!
- Used at fine golf courses from coast to coast!

Also Try Aero-San Shoe Deodorizer and Sanitizer Another fine DBA Product

ORDER YOUR SUPPLY TODAY!
Per Single gallon \$4.95
Order from your dealer or direct from DBA and give dealer's name.

DBA PRODUCTS CO., INC.
Lake Bluff, Ill. 60044

For more information circle number 189 on card

Safari

SPECIALISTS IN

COLD WATER DRINKING EQUIPMENT

GAS-FIRED Drinking Fountains
and Water Coolers
ELECTRIC Drinking Fountains
No Moving Parts to Wear Out...
No Motors to Burn Out!

SAFARI (DEPT. G)
591 N.E. 5th Street, Pompano Beach
Florida 33060
Phone (305) 942-8076

For more information circle number 155 on card

A Proven Golf Ball Washer for . . .

The HENRY GOLF BALL WASHER

Used On Leading Golf Courses
Throughout The World

You get more ball washer for the money with The Henry. It costs less initially. Course Supts' will find it requires minimum upkeep. Golfers throughout the world have found that The Henry, with its rubber squeegee and gasket, cleans their balls faster and more efficiently.

DEALERS IN ALL PRINCIPAL CITIES

only
\$16.75

Prices F.O.B.
Milwaukee, Wis.

Also available in
baked, enamel colors @ \$17.75

W. C. Schendel
6510 W. River Pky.
Milwaukee,
Wisconsin 53213



For more information circle number 231 on card

effective control of poa he had found is good cultivation practices. Also, in the latter part of winter, he applies an arsenical and inhibits the early growth of the poa.

Craig commented that he adds a little iron to his fungicide applications. It costs little and he has enjoyed very good results. He then turned to the subject of irrigation.

"Application of water," he said, "should be done as the grass needs it—not when the superintendent wants to do it! Above all, don't leave the amount of water to be applied to your watering man. Don't laugh—I've heard this!"

"How much water and when, I can't tell you, but you—the superintendent—must decide."

Craig warned against the effects of wind, and to remember that you can always add water, but you can't take it off!

You have to look at every green, Craig said. Get out early in the morning and look at the pattern of dew on the grass. If there are dry spots here or there, then go back in the afternoon and look for stresses or strains in the grass. Take a soil probe and educate the fingers to remember when soil is wet or going into wilt. "Feel" is most important. While he had tried moisture gauges, he had found there was no substitute for "poking" it.

Craig tries to keep a even depth of moisture in his soil, say, in the top six to eight inches. He only syringes when it is windy—he finds it is not necessary otherwise with good soil. To get depth of moisture, use a low volume sprinkler such as the pop-ups. Their use, he said, had never given him any problems with wet spots.

There's no substitute for hand watering on old greens, he said, where there are narrow aprons and tree roots under the green. These will go dry faster and, if you use automatic watering, you will make the area too wet.

Fulwider then talked about ball mark repair. This is the most difficult task on a course, he said. If only a player would fix it right away, there would be no problem. The only thing to do here is to get the point over to the members somehow, and through cooperation with the greens chairman.

Continued on page 105

stewart commissaries deliver sandwiches you can build on



...and bank on

Building or banking, you can depend on Stewart's consistent quality to keep customers coming back for more. They're convenient to serve. Everybody likes them, and they'll add variety to your daily menu. Stewart prepares and delivers forty or more, controls your inventory and loans free a quality oven capable of toasting up to twelve sandwiches in four minutes or less. You can operate with less labor, eliminate food waste, serve customers faster, and control costs more efficiently. Simply contact your nearby Stewart Commissary to learn how Stewart knock and know-how can fit into your food service operation more profitably.



SANITARY PREPARATION

Preparation approved by national, state, local sanitation officials.



SCHEDULED DELIVERY

Delivered in refrigerated trucks to meet your scheduled needs.



FREE OVEN LOAN

Loaned oven installed free, utilizes only a square foot of space.

Stewart Sandwich Service... now being served in more than 45,000 outlets from coast to coast:

SCHOOLS • GOLF CLUBS • POOLS • HOSPITALS • TAVERNS • BOWLING LANES • FOUNTAINS • DRIVE-INS • VENDING MACHINES.

FREE literature available upon request.



stewart in-fra-red, inc.

P.O. BOX 207, FONTANA, WISCONSIN 53125

stewart sandwiches...the best taste you ever toasted

For more information circle number 151 on card

ning 9-hole club with FHA loan.

Franklin D. Hammond, 77, another who made history by growing fine turf on New England golf courses, died recently . . . He was superintendent, Tyngsboro, Mass. GC from its beginning until about 15 years ago when he switched to Unicorn CC, Stoneham, Mass., where he was active until his retirement . . . Two more Massachusetts veterans have been hospitalized . . . Arthur Cody, superintendent at Wollaston GC, Quincy, Massachusetts for 20 years until his retirement five years ago, laid low by a heart attack . . . Michael McDonough, who retired several years ago after 25 years as superintendent, Oyster Harbors Club, Osterville, Massachusetts suffered a stroke and now is in a nursing home . . . He was succeeded at Oyster Harbors by his son-in-law Dave Gardner . . . Managing a golf course is an all-weather, all-hours, tough, worrying job and when we are told about so many older superintendents breaking down and running into long heavy hospital expenses we wonder if their clubs had insurance to ease the last round of Old Faithful . . . Private club officials who can pass the responsibility to the next administration seldom are in the same class as industrial employers in insurance and retirement money for the help.

Another thing that has us wondering about golf club protection and insurance of its workers is being reminded that Jim Savabek, Bradenton Fla. CC and his neighbor, Gordon Hinn, have been injured on their jobs . . . Bud Quandt, Airco GC, St. Petersburg, is new president, Florida West Coast GCSA, Jack Graves is vice president; Jim Savabek is secretary-treasurer and Carl R. (Bud) Pearson, superintendent, Lakewood GC, St. Petersburg, is editor of the Florida West Coast News Letter . . . "Sy" Graham, Franklin Manor, 1445 N. Tamiami Trail, Sarasota, Fla., formerly with Milwaukee Sewerage Commission, is assistant editor of the region's newsletter and gives a major league boost . . . Graham has been ailing but is recovering . . . Some of those Florida West Coast superintendents are doing magic jobs on budgets that are

Continued on page 109

Putting green

Continued from page 95

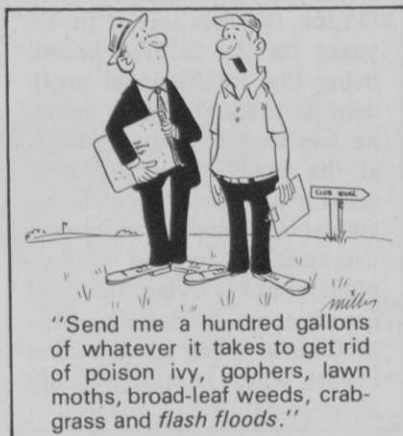
His men are instructed to fix ball marks before starting to mow the green, but it is rarely done properly, due to the time problem.

One problem is that women golfers find it difficult, physically, to repair ball marks. Why not educate caddies to do this, Fulwider suggested? While there are tools available to do this job, a common table fork works very well.

On the subject of cup changing techniques, Roberts observed that the big problem on small greens of around 5,000 sq. ft. is that you often end up with only 500 to 800 sq. ft. of suitable cupping space. In this case, you must use slopes sometimes. However, he added that, even then, he always allows a couple of feet around the hole that is level.

Roberts said that on his course, his men were instructed to move the cup in a clockwise pattern away from the last cup. This way, whoever did it always knew which way to go. It was his practice to make two cuts, using a standard cup cutter, break the plug in half and put it in the old cup. It heals quicker, and putts better than putting it back in one piece. Roberts said he played a little golf himself, and when changing cups, likes to consider the hazards around the green and whether his members or players of professional quality were playing that day.

After William Bengeyfield thanked the superintendents for a most informative session. Mr. Henry H. Russell brought the meeting to a close. □



\$34.10

Per dozen
minimum 1,000 dozen
(no-imprint)

Chemold, mfrs. of the world's first perfect solid state range ball.



At last, a solid state ball that is indestructible.

This uncuttable ball has tremendous feel and click, and will give your customers much greater distance and eventually give you greater profits.

Maintenance problems are eliminated because Chemold's range ball will retain its brilliant color after many yards and years of range abuse. Sound great?

Cut out this coupon today for increased profits.

PRICE PER DOZEN				
No Imprint	100-299 Doz.	300-499 Doz.	500-999 Doz.	1,000 & up Doz.
White with Red Stripe	□	□	□	□
	\$3.90	\$3.80	\$3.65	\$3.50
Yellow/No Stripe	□	□	□	□
Imprinted Range White—Red Stripe	□	□	□	□
	\$4.00	\$3.90	\$3.75	\$3.60

CHEMOLD CORP.
 138th Place at Archer Avenue
 Jamaica, New York 11435
 Please send me doz.
 Enclosed please find check ☐, money order ☐

Name
 Company
 Address
 City State Zip

TERMS: C.O.D. — F.O.B. FACTORY, JAMAICA, NEW YORK.
 SAVE 10 CENTS PER DOZEN
 BY REMITTING WITH ORDER.

For more information circle number 216 on card