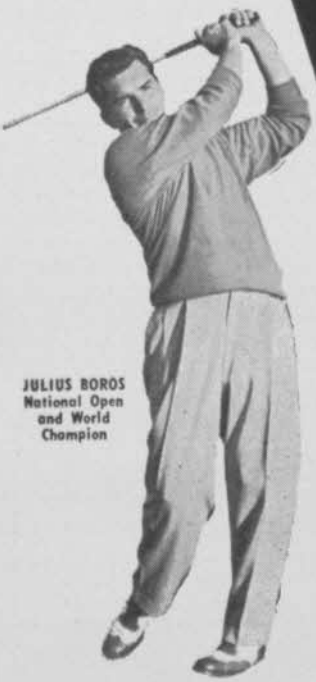
at the 1952 National Open... 130 out of 161 players wore

Foot-Joy

"The Shoe That's Different"

BY FIELD AND FLINT CO.

this fantastic superiority means profits for you!



JULIUS BOROS
National Open
and World
Champion

It's easier to sell FOOT-JOY... customers know they're the overwhelming choice of champions. And they're already sold on the superior craftsmanship, round-the-course comfort and the same smart styling of our custom-crafted street shoes.

No need to carry large inventory. You can sell Foot-Joy golf and street shoes right from our catalog. And our in-stock plan assures fast factory-to-you service. Carry — feature — promote FOOT JOY SHOES and set new profit records at your pro shop.

Style 6014 —
Natural grain calf
one eyelet tie

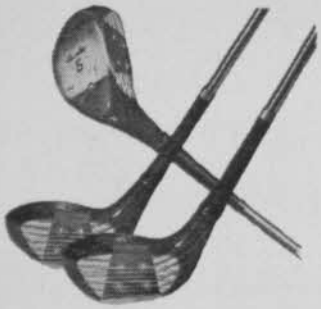
Style 7099 — Golf
Black calf with
shawl tongue

Write for free catalog

FIELD AND FLINT CO.

Brockton 68, Mass.

have you seen the new Burke
Nos. 5 & 6 Woods?



Golfers everywhere are expressing much interest in these new clubs that are perfect for bad lies. Carefully made to give plenty of distance, extra loft, and pin-point accuracy. Available immediately for only $15.00 retail.

JOIN the Swing to BURKE

PUNCHIRON

RECORDED WOODS

For almost 50 years Burke has been America's finest club — this year's recorded woods and punchirons are the greatest ever built— they are incomparable — write for catalog.

SOLD ONLY THROUGH PROFESSIONALS

Burke GOLF NEWARK OHIO
America's oldest and exclusive clubmakers

Charles Morgan, Chicago District Golf Assn. pres., at Western Golf Assn. caddiemasters' dinner, said that the moral, physical and financial hazards cities have for youths give the golf clubs the biggest opportunity for valuable public service any business or social organization could have, and a responsibility golf must recognize.

Arthur J. "Chappie" Chapman, veteran pro at Wheeling (W. Va.) CC recovering from heart attack . . . Harry Nash, Newark (N. J.) Evening News golf writer and fellow who has done best work in tournament radio coverage, recovering from kidney infection . . . Totten P. Heffelfinger, USGA pres., given Minneapolis Chamber of Commerce award for "outstanding service in winning national recognition and honor for Minneapolis."

Paul Hahn again won big hand from pros and gallery for his trick shot exhibition at the Masters' . . . Grantland Rice Sportlight feature "Wizard of the Clubs" showing Hahn at his tricks had world premiere at Augusta night before Masters' play began . . . Tom McHugh now pro at Elks CC, Bozeman, Mont. . . .

(Continued on page 108)

THE GOLFER'S PAL

Model No. 1 — $3.50

Model No. 1-X — $5.00

A SCORE KEEPER FOR THOSE WHO WANT THE BEST

By a single press on the plunger the stroke is automatically recorded. To reset dials to zero turn knobs on face of PAL as indicated by arrows.

Attractively finished to be worn on the wrist. Packed in individual box and carton.

Obtainable through your local jobber.

BORM MANUFACTURING CO.
ELGIN, ILLINOIS

"Man...what a golf bag!"

PAR-BAG DELUXE

the finest ever made . . . regardless of price!

"Step-down Keystone top ring carries up to 18 clubs! And look at these metal-reinforced, padded club-dividers, this holder for large umbrellas!"

"It's beautiful! Top-grain cowhide, harness leather trim . . . color-fast and waterproof too!"

"I go for this sponge-rubber lined, wool-padded shoulder sling! And this saddle brace gives it perfect balance, distributes the weight for easy carrying!"

"Copper rivets throughout, solid brass locks on all pockets. Brass hardware too!"

"It's rugged too! Shock-resistor steel bottom ring protects it on carts, the molded rubber, non-skid bottom is guaranteed to outwear the bag . . . and these three steel stays keep it in shape always!"

"I'm sold on this full-length locker pocket with tee, glove and accessory pocket, and on the pilfer proof, detachable zipper traveling hood stored inside. And look at the size of the ball-storage pocket!"

Scarlet or kelly-green cowhide with saddle russet trim. **$75** Same model in Saran, duck, dobby weave nylon, or vinyl-coated fabric (all in smart plaids or solid shades, all color-fast and waterproof). **$50**

Other Par-Bag models for men and women as low as $6.95.

See PAR-BAG DELUXE at your favorite sporting goods store or pro shop • ATLANTIC PRODUCTS CORPORATION, Trenton, N. J. • World's largest maker of golf bags

LATEST KROYDON VICTORY

TOMMY "Thunderbolt" BOLT

member of the Kroydon Company advisory staff, winner of the 1953 San Diego Open and Tucson Open, plays Kroydon Golf Clubs. He's full of praise for the . . .

CRUISER AND ESSEX WOODS AND CRUISER IRONS *with the* VERTEBRAE CONTRO-FLEX SHAFT

You'll be amazed at the extra distance they give you. The secret of their terrific power lies in the vertebrae principle of structure, which utilizes *all* of your driving power, carrying it to the club head in lightning-like relays . . . reflecting none of it back into the shaft. Ask for these clubs at your favorite golf shop.

FINE LINE OF GOLF ACCESSORIES
Fairway Cruiser Caddy Carts • Lumite Scotch Plaid Bags — Matched Unit of Golf Bag, Carryall Bag, Shag Bag, Head Covers and Umbrella Cover

THE CRUISER WOOD: Custom built laminated heads with a modern look. Individually registered.

New Cruiser THUNDERBOLT Balls

100+ COMPRESSION

New winding, new cover. A distance ball for top-flight players. Hy-test Ball for average golfer.

CRUISER IRONS
Custom built with redesigned Muscle Back head for greater weight concentration, more accuracy. Individually registered.

Kroydon

CLUBS FOR BETTER GOLF

MAPLEWOOD, NEW JERSEY

GOLFDOM
THE BUSINESS JOURNAL OF GOLF
MAY • 1953

Meditations on the Wonder of Golf

By LEO J. FESER

YESTERDAY, television was a miracle. Jet planes leave vapor trails across the skies, hardly causing an upward glance by harried and hurried man beneath. Atom bomb news is absorbed with our morning cereal, man continues to act like the devil, taxes and death remain certain and much is required to jar us from our casual attitude toward the miraculous environment surrounding us. We miss a lot of the fun of living when we fail to observe the unusual in that which is common; look at the blossom of the lowly dandelion with an ordinary reading glass and you will agree. Then look at golf.

Shakespeare could well have been considering that subject when he wrote, "Here is a wonder, if you talk of a wonder." We might enlarge a bit and say that here are many wonders, for golf is truly a game commanding descriptive adjectives in abundance. It is a remarkable game. It is surprising, astonishing and incredible. It is enjoyable and painful, invigorating and exhausting, encouraging and frustrative. Borrowing again from the Bard, it is truly a game "wondrous strange."

A ball is driven down a fairway. We need not dwell on the fact that the player struck the ball, but that is oftimes a wonder in itself when thought is given to the form of some who strike the ball. Let us pass up consideration of the evolution of the modern golf ball which is a chapter of marvels. The ball strikes the turf, perhaps bounces a bit and nestles down, where? Statistics indicate that in a given 100 yards of fairway and the rough on 30 feet each side of the fairway, the ball could stop in any one of 4,000,000 places. To put it in a different light, one might drive 4,000,000 balls — we say "might" — and have them all nestle in their respective little nooks in the area given without one touching another.

If it is a wonder that the ball was driven from the tee, what about the second shot? Where, oh where, does the little ball lie? On an upslant, downslant or side slant? Beneath sheltering grass in the rough or on velvety turf in center fairway? Possibly it lodges deep in the footprint of the sands where others trod and thoughtlessly failed to close the pits behind them. Or in the divot hole of the equally thoughtless one who failed in the courtesy of replacement. The second shot may be classified as the miracle shot of golf. How many miracles can there be? The shot may vary from a full wood to a short iron. It may require, as General Forrester once said, "elevation of the sights a little lower." Oh! Bless us, we are in the land of miracles!

Miracle of the Green

Then putting. Accurately rolling a wee sphere with a weighted stick over a surface trampled by thousands and thousands of foot-steps daily. Over a surface on which balls with back-spin smack from more than a hundred yards away, braking suddenly on turf cut less than a quarter inch high, barely marring the surface of that turf when conditions are right. And now we are off on the greatest marvel of all: production and maintenance of golf course turf. Let the golfer go on up the course, performing his miracles as he

goes. He may collect a score that vies with atom bombs for news space.

We stop and look at turf.

Turf. Webster tells us, is the upper stratum of earth and vegetable mold filled with the roots of grass and other small plants . . . Hold it, Webster! Don't let the chairman of the green committee catch you filling golf turf with the roots of other small plants! It just isn't being done in the best circles. As a matter of fact, Mr. Webster, keeping out those other small plants is one of the wonders that prompted this story. But we will by-pass that job for a moment and look at the putting green, the acme of turf production.

The surface of a good green is comparable to that of a fine Persian rug. Some dues-paying club members say greens cost as much, but that is seldom true. They just feel that way. There is no mat or spongy surface, the blades of grass are upright, the roots deep enough to carry the grass through hot and windy days without injury and there must be no imperfections which can logically be blamed for missed putts. The grass is dense, so dense that if one can visualize an Iowa corn field in July with the corn plants less than two inches apart, he can create an imaginary magnified putting green. A hundred individual plants to each square inch of putting green surface is not uncommon.

A putting green is a contradiction. Nature provides no comparable phenomenon — tender, living plants must bear the traffic expected of a floor, a path, a roadway. These living plants must not be permitted the natural function of providing food or flower — they are clipped as short as mechanical means make possible — yet they must live and thrive to perform their unnatural function. A host of enemies apply constant pressure to destroy it — insects to eat it, earth worms to cast up excremental heaps to mar its surface and plaster down the tiny leaves, heat to scald it, cold to freeze it, rain to drown it, disease to wither it and humans to trample it with spiked shoes twisted vigorously into its very soul. Withal it must provide the expectant golfer with what he demands: a true putting surface, a surface that will "hold" a pitch.

Webster Missed His Shot

Mr. Webster and his other small plants must now receive attention. Among those other small plants that would appreciate a homesite in the ideal soil and moisture environment afforded by the putting green are plantain, chickweed, poa annua, shepherd-purse, clover, yarrow and many others, including that Vishinsky of acquisition, crabgrass. Roots of these enemies of fine turf can hardly be found without the attached leaves and stems, so the miracle of a putting green must be placed beyond the Websterian concept of turf.

Back now to the further miracle of golf, let us turn our reading glass over to examine some of the humans who are much a part of the miracle. The player who nonchalantly tosses his burning cigarette onto the tender turf as he leans his weight on his putter and scratches a mark to show when a ball has come to a temporary rest. How very human of him to miss that putt when he follows 20 to 30 foursomes who took the same unkind liberties! How miraculous is his silence and lack of blame to all but himself!

The golf course superintendent whose responsibility it is to maintain the turf is somewhat of a miracle-man himself. Director of a handful of men who are armed with tools of the trade, he combines art and science to produce and protect the turf which is the basis of golf. Occasionally the forces opposed to him get the upper hand; grass dies and golf suffers. Woe unto him who allows golf to suffer! Atom bombs and taxes are forgotton by he who wields the club; miracles become commonplace, wrath more so. The day is ruined; it is obvious that some one simply doesn't know his business!

Aye, Mr. Shakespeare, golf is indeed a game "wondrous strange."

At semi-public courses used clubs taken in on trade sell about as fast as new clubs because so many of the players have sharply limited purchasing capacity for golf and they want to get the most golf money will buy.

If the semi-public course pro shop doesn't meet the price competition the business goes to the stores and the player doesn't get the quality for the money he'd get in a good used set. The semi-public course pro makes a mistake if he looks at the traded-in club sales as a necessary evil. He should consider this business as a very important start in getting a player in the habit of buying the best for the money at his shop and that will put the pro in a strong selling position in all price classes.

—Homer Herpel,
Indian Meadows GC, St. Louis, Mo.

Sure Prescription for A Good Stand of Grass from Seed

By O. J. NOER

With Merion blue grass seed priced at $3.00 to $5.00 or more per lb., and seed of the newly developed Polycross strain of bent grass for greens at $7.50 per lb., the cost of seed on an acre basis exceeds the value of the land upon which most golf courses are built. To use Merion blue grass costs from $120 to $200 per acre for seed at the modest seeding rate of 40 lbs. per acre, or $300 to $500 at a rate of 80 to 100 lbs. When Polycross bent is used at the suggested rate of 1 lb. per 1,000 sq. ft., the cost on an acre basis is $325, and at double this rate, or 2 lbs. per 1,000 sq. ft., the cost becomes $650 per acre.

Obviously it behooves anybody using either of these grasses to make conditions for germination and subsequent seedling growth as near ideal as possible. It is important on small test areas, but even more so on large scale seedings. Good seedbed preparation, the use of lime on acid soil and ample fertilizer before seeding are extremely important. Uniform distribution of seed and placement at the best depth for growth affect the uniformity of stand. An adequate supply of moisture for germination and seedling growth is essential.

Frost and wind are deadly and devastating enemies of shallow rooted, tender seedling grass. During a mid-winter or early spring thaw, in an open winter, nightly frosts heave the grass plants out of the soil and expose them to the drying action of sun and wind. Heaving desiccation are far more deadly than the actual cold. Serious loss seldom occurs if there is a dense sward of deeply rooted grass before the onset of winter. Early seeding in the fall, immediately after the break in hot weather, is important along with the use of ample phosphate and nitrogen to speed growth and shorten the time required to develop a deeply rooted grass. The fertilizer is good insurance. Its cost is small as compared with the cost of seed and seedbed preparation.

Seedbed Preparation

Seedbed preparation may make the difference between success and failure. To throw grass seed into a loose, dry soil is a waste of good seed. The necessity for an ample and continuous supply of soil moisture for seed to sprout and grow is obvious. The final seedbed must be firm without clods of any size. It must have a thin cover of loose, mellow soil so the seed can make contact with and become a part of the soil. Seed cannot absorb water unless it is in direct contact with moist soil particles.

In early times seedbed preparation on fairways was more thorough than now. Unfortunately, some of the equipment used then has not been adapted for use with modern tractors. Fairways were plowed, disced several times and floated to level the surfaces. With the exception of steep slopes, subject to bad wash, they were worked during the entire summer with a tool which improved tilth and smoothed the surface. Two double rows of circular knives (one pair in front and the other in the rear) destroyed any and all clods and the wooden frame and cross piece in the middle eliminated slight ponded depressions. The continuous cultivation sprouted and killed most of the weed seeds and made a smooth, firm, ideal seedbed.

Those who do not adopt these practices should disc and harrow enough times to produce a firm, mellow seedbed and should use a Meeker disc after seeding. This machine has two corrugated rollers which press the seed into the soil and leave a slightly roughened surface which is desirable, provided the machine is operated crosswise on slopes which are subject to wash.

On putting greens the final seedbed should be prepared with even greater care. A smooth, well contoured surface of clod-free mellow soil is the first step in the quick development of a satisfactory playing surface. Before seeding, and not afterwards, is the time to eliminate low ponded pockets or high spots. A heavy topdressing for the purpose of leveling after the grass becomes established checks growth and may smother the grass. After the topsoil is in place and the surface is shaped in accordance with the architects' design, the green should be rolled. Besides

firming the seedbed, rolling enables one to spot quickly the high spots or low pockets.

The next step is for workmen to push soil from high spots into adjacent depressions with the backs of wooden rakes, or with a homemade soil pusher. It may become necessary to remove part of the soil from high spots and sometimes more topsoil is needed to level low spots. It is well to roll again with a light weight roller before the final inspection to check smoothness of the surface. A little extra care at this stage pays off handsomely later when play starts. After surfaces are exactly right, the top ¼ in. of soil should be stirred with sharp rakes to prepare the seedbed. Light rolling after scattering the seed is advisable to insure good contact of the seed with the soil.

Soil Conditioners Not Justified

Where chemical soil conditioners have been used the initial stand of grass from seed has been poorer on some of the treated than on untreated plots. Because of the marked granulation failure to roll sufficiently to bring the seed into contact with soil moisture is the plausible explanation. The evidence up to now, and the very high cost, does not justify the use of chemical conditioners on an acreage basis. Apparently surface applications of small amounts prevents crusting of the soil and stops erosion. If true, their use in this way on banks and slopes may be justified.

The matter of cost is of secondary importance on greens, but how long these soil conditions will stabilize soil in greens is open to question because of the terrific compaction from traffic and heavy watering. Based on present knowledge, the large scale use of chemical soil conditioners on new or established greens is hardly justified. They should be tried in a small way first, because they may be the answer in part to a vexing problem. Some soil workers contend that soil conditioners of themselves do nothing to improve soil tilth. They stabilize the physical soil condition. According to them good soil tilth must be developed while mixing the conditioner with the soil. Working the soil develops good structure and then it is stabilized. If this be true, a surface application on a hard, compacted green is not the way to improve soil structure.

Lime Is Necessary

The use of lime is necessary for the successful maintenance of a good bluegrass turf. Otherwise the bluegrass will disappear gradually over a period of several years. Excessive soil acidity and low content of available soil phosphorus are the reasons for the absence of volunteer bluegrass in New England and along the Atlantic Seaboard.

If the soil is moderate to strongly acid, the use of some lime is desirable for the best performance of bent grasses.

A soil test for reaction is the correct way to determine need for lime. Present practice is to express reaction in terms of pH. By this method the figure 7 represents a neutral soil. Lower figures denote increasing acidity. The use of lime is justified when soil reaction is below pH 6.0. There are several reliable and inexpensive quick test kits on the market. Dyes which change colors over a specific

(Continued on page 89)

RATES FOR APPLYING GROUND LIMESTONE TO NEW FAIRWAYS

Soil pH the Yardstick Used to Express Acidity	Degree of Acidity	Blue Grass, Bermuda Rye Grass		Fescue Bent Grasses	
		Sandy Loams	Loams & Clays	Sandy Loams	Loams & Clays
7	Neutral	0	0	0	0
6.3 to 7.0	Very Slight	0	0	0	0
5.8 to 6.2	Slight	1000	1500	0	0
5.3 to 5.7	Medium	2000	3000	1000	1500
4.8 to 5.2	Strong	3000	4000	2000	3000
4.0 to 4.7	Very Strong	4000	6000	3000	4000

RATES FOR APPLYING GROUND LIMESTONE TO NEW GREENS

Soil Reaction	Limestone Rates Pounds per 1000 Sq. Ft.
6.6 to 7.0 pH	0 lbs.
6.1 to 6.5	0-10 "
5.6 to 6.0	10-20 "
5.1 to 5.5	20-40 "
4.6 to 5.0	40-60 "
4.0 to 4.5	60-80 "

Another **ULTRA** *feature for you and your discriminating customers*

Sets of Haig ULTRA Woods and Irons now carry exclusive *registration* numbers. The purchaser *records his number* with *you* and with the *factory* at time of purchase, and receives a handsome, wallet-size card bearing his number. He appreciates this personalized service, and it works to your advantage too. He becomes a regular customer of your shop. He can order identical replacement clubs or new sets of clubs—BY USING HIS EXCLUSIVE FACTORY-RECORDED NUMBER, through *you*. Our salesman has complete details and merchandising suggestions for you.

Walter Hagen

THE **ULTRA** *IN GOLF EQUIPMENT*

Walter Hagen
In the name of Perfection

WALTER HAGEN

Grand Rapids 2, Michigan • Division of Wilson Sporting Goods Co.

Sodium Arsenite as Control for Crabgrass, Poa Annua

By DAN L. HALL, Jr.
Supt. Peachtree Golf Club, Atlanta, Ga.

Sodium arsenite has been used as an herbicide since the early 20s, but to my knowledge it has never been looked upon very favorably in the South. Many outstanding herbicides have been developed since the release of chemical restrictions of World War II. These have been developed and used primarily for specific types of vegetative life. One of these chemicals may kill this plant but have little or no effect on another; but in using sodium arsenite I have found it to be adaptable to practically all of my herbicide problems.

The biggest problems in North Central Georgia are crabgrass, crowfoot, and dallisgrass. The pest of winter and spring is of course poa annua. I would not say that sodium arsenite will kill all undesirable plant life but when proportionately mixed with other herbicides there is no weed problem that cannot be handled. I shall endeavor to tell in this article of my experience, good and bad, with this particular herbicide.

Our initial experience with sodium arsenite was when we experimented with the hope of using it to step up our Bermuda and thereby avoid the unfavorable transition from rye to Bermuda. This normally caused a period of from six to eight weeks of the poorest putting conditions imaginable. Knowing that rye was easily killed by sodium arsenite we decided to kill the rye on one-half of each green as soon as conditions were favorable. These conditions appear approximately the last week or ten days of April. Test run in Spring of 1950 proved that 3 oz. sodium arsenite per 1,000 sq. ft. would give us the desired results. The first application was made the third week of April 1951 and all rye on the treated section was completely killed within 48 hours. Little attention was paid to atmospheric and soil temperatures, humidity and soil moisture. Those greens treated during the hottest portion of the day showed decisively adverse affects on the Bermuda. Still, a transfer from rye to Bermuda was successfully made the last week-end of May 1951.

Three-Way Treatment

After the transfer, another important fact loomed before us. The crabgrass on the treated side was lessened so much that it was rated 90 percent less than the untreated side. The untreated side was then treated with a similar treatment the second week of June 1951. The results were rated excellent. Little effect did the two treatments have on crowfoot or dallis, but we shall discuss these two later.

The following December I discovered that the side treated in April had little or no poa annua while the side treated in June was very heavily infested. I immediately began to plan for my weed control program of 1952 with this thought in mind; if the operation was properly done we could accomplish three jobs in one application of sodium arsenite. We could speed up the Bermuda by lessening the competition of rye and at the same time effectively control both crabgrass and poa annua. I read and studied what few records were kept of the 1951 operation and set up the plans for 1952. By burning the poa infected half first I would then have complete coverage in regards to this worrisome pest.

This operation was begun at 9:50 AM, April 28, 1952; after poling and allowing the grass to thoroughly dry. The temperature was 78°F, humidity low and the soil moisture on the side to be treated about one third the amount required for the optimum growth of rye grass. I mention these conditions here because they are of utmost importance and were disregarded in the first treatment with decisive disadvantages to the Bermuda. Wishing to avoid the same mistake, I carried and staked in the area to be treated a thermometer which was carefully read before mixing. For each 5 degree F increase in temperature I reduced the sodium arsenite one-quarter oz. The last two greens treated received a total of one-quarter ounce per thousand while the first three were treated with 3 oz. per 1000 sq. ft. I used 12.5 gal. of water at