# A special message about MacGregor Colokrom irons:

This golf business is getting to be more and more like the automobile business. New lines are introduced—the public looks them over, makes its choice and the sales curves act accordingly.

When we began to manufacture two-tone Colokrom irons, we were quite sure they would be well received by both professional and amateur golfers—but we've been *overwhelmed!* Since November 1st, the Colokrom department of the MacGregor plant has been working three shifts—and even at that it will be late April or May before all advance orders are filled.

Yes—American golfers have gone completely overboard for Colokroms. Of course, this makes us happy, but we are very sorry all orders cannot be filled at once. They will continue to be filled in the exact order they are received. It is the only fair way—we know you'll agree.

Thanks for your loyal support . . . and for your patience, too.

MacGregor
THE GREATEST NAME IN GOLF
CINCINNATI 32, OHIO

MT, Tommy Armour and Louise Suggs COLOKROMS—"world's most wanted golf clubs!"

Congressional seems to be a good one generally. The new Pennlu strain from Pennsylvania is said to be an excellent putting green grass.

Water management is as important as selection of the right grass. Improper watering is responsible for many bad greens. The tendency is to overwater. Some fail to recognize the necessity for hand syringing during hot weather. It is the only way to save shallow rooted turf. Such greens must be watched for wilting on Saturdays and Sundays as well as during the week. Failure to do that is the reason why some greens deteriorate over the weekend. They may be reasonably good Friday night and bad by Monday.

The workman who waters the greens is the key man on the force. He should be selected for intelligence and trained to do the job. Instruction should include something about the why as well as the how to use water.

Drainage is another important item associated with water management. It includes air drainage as well as quick removal of surplus water. Good internal soil drainage is extremely important, especially in regions where heavy rainfall is a probability during hot weather. Tile is not needed when greens are located on a porous subsoil. With tight compact subsoil tile is desirable. The herringbone system is best. The distance between tile lines should not exceed 15 to 20 feet. Trenches should be backfilled with coarse material such as pea gravel. A gravel blanket on top of the subgrade is a desirable feature provided a tile system is installed underneath to remove gravitational water when it reaches the gravel blanket.

Surface run-off is the best way to remove water quickly. Greens should be designed so surface water leaves the green in several directions. Pocketed areas which hold ponded water should be absent.

Good air drainage insures passage of air across the surfaces to remove moisture laden air during humid periods. When the air in immediate contact with the grass is saturated with moisture dew and gutated water remains on the surface in droplet form, this provides a favorable medium for disease. Air movement across the green enables evaporation to occur and the grass becomes dry.

### Effects of Lime and Fertilizer

Lime and fertilizer affect the well-being of grass in many ways. Both have profound effects upon the amount and severity of turf diseases. The examples cited earlier are proof of that fact. The discussion about lime and about fertilizer was left to the last purposely, because fertilizers are blamed by some for all of the ills of turf. Nothing is farther from the truth. Although fertilizers can be misused, no other tool is as useful or has as profound an effect upon turf quality and density.

Lime is the great soil regulator. Need for it must be considered first and then it is easy to devise a sound fertilizer program.

A few plants such as gardenias and camellias need an acid medium. Otherwise they cannot obtain the minute amount of iron required by the green portion of the leaves and stems. Centipede is a good example among grasses. Applications of lime are often fatal to its well-being. At one time it was thought that bent grasses require an acid soil. That is not true.

Most plants grow best in the range of pH 6.0 to pH 8.0. The range is narrow in many instances — such as blue grass, alfalfa, etc. Other plants can withstand greater acidity and grow over a wider reaction range. That is the case with the bent grasses and fescue. Velvet appears to be more acid tolerant than any of the other bent grasses. The beneficial effects of lime seldom show in the amount of growth. Lime helps grass withstand adversity. The grass on unlimed acid soil starts to turn brown first with the onset of dry weather. The greener grass along each edge of the lime lines on football fields is a good example. The reduction in disease following the use of lime on an acid soil was cited earlier. Sometimes a light dusting of hydrated lime stops brown patch better than anything else.

The use of lime is justified whenever soil reaction is below pH 6.0. A dolomitic type of lime is best when the soil supply of magnesium is low. Dolomite corrects acidity and eliminates a possible soil deficiency in magnesium.

After providing lime, or eliminating need for it, the problem is one of devising a sensible fertilizer program. In doing so this fact must be kept in mind. The farmer depletes the soil by harvesting the crop. Greens maintenance resembles farming in this one respect. The clippings are the crop which is removed. On other turf areas the clippings fall on the ground. As they undergo decay the mineral elements

are released and restored to the soil in forms which the grass can use. Plant food losses are confined to nitrogen.

**Iron Chlorosis on Increase**

The growing season in Wisconsin is five to six months. Clippings have been weighed and analyzed from one green at Brynwood. During the season the dry weight of clippings from each 1,000 square feet was 100 pounds in round numbers. Where the growing season is longer, the amounts would be proportionately more. The clippings contained about 5 pounds of nitrogen, 2 pounds phosphoric acid, and 4 pounds of potash. The plant food removed during the season was equivalent to a 100-pound bag of 5-2-4 fertilizer. It is significant that there is almost as much potash as nitrogen, and only half as much phosphoric acid. This 5-2-4 ratio is vastly different than 5-10-5, 4-12-4, etc., which have been used in the past. No wonder many greens are becoming low grade phosphate mines and iron chlorosis is on the increase.

Based on the Brynwood findings, bent greens should receive about 1 pound nitrogen, ½ pound phosphoric acid, and ¾ pound of potash each month per 1,000 square feet of surface to replenish the amounts removed in the clippings.

The easy way is to apply the potash and phosphate all in the late fall or to apply one-half in the spring and one-half in the fall. Both are taken up by the soil so they resist leaching. Then use from 1 to 2 pounds of nitrogen per 1,000 square feet per month. The other alternative is to make monthly or semi-monthly applications of all three — nitrogen, phosphoric acid, and potash. When this is done, the fertilizer ratio should be something like 1-1-1 or 2-1-2, rather than 1-2-1 or 1-3-1.

Iron chlorosis is becoming more common. It was responsible for many bad greens during the summer of 1954. Most of these greens could have been saved by prompt use of copperas which is ferrous sulphate. The secret is to use 2 to 3 ounces per 1,000 square feet with not more than 5 gallons of water. The iron sulphate must be left on the leaf. At least 4 to 5 hours should elapse after spraying with iron sulphate before it is watered-in, or before the green is watered. Promptness is important, otherwise the weakened grass will fall prey to one of the many fungus diseases.

It is only natural that discussions of disease emphasize fungicides and their use. However, the role of management cannot be ignored. Fertilizer and water practice are the things which have profound effects on disease and the effectiveness of fungicides.

**"KIDS' DISEASE" RUINS GREENS**

One of the worst cases of juvenile vandalism was the case in the Michigan and Border Cities district. Lame-brained kids drove a car over nine greens with results shown above.

Repairs were made by constructing a device which removed damaged strips to uniform width and depth, and which cut replacement sods from green borders and nurseries. Despite superintendent's ingenuity, heavy expense and time beyond value are required to repair the destruction.


# RANGE OWNERS Spring Specials

## for a thrifty start on 1955!

## GOLF BALLS — THRIFT BUYS OF THE YEAR

**NO. 1** While they last—Assorted Makes—Washed or Repainted, our most popular grade for range use. (10,000 dozen available). Bulk per dozen ..... $1.95

10¢ per dozen additional for banding, if requested.

**NO. 2** While they last—Practice or Driving Range balls for low maintenance. Recommended to range operators who must get the most in value. Available in permanent blue dye band (from stock) or plain white. Bulk per dozen . . . (20,000 dozen available) ..... $1.00

### REPROCESSED GOLF BALLS—For Retail Sales

**(Fine quality balls—can be, but not recommended for strenuous range use)**

**NO. 3** "Blue Ribbon"—Hy-Compression, liquid center, 100% new balta cover. Suggested retail price 50¢ each or 3 for $1.35 ..... Boxed $3.05 Bulk ..... $2.86

With Cores Furnished, all high compression given in exchange ..... $2.66

### WOOD GOLF TEES

Mill Run Golf Tees—98% usable—Mixed Colors and Lengths, a driving range special .....

$1.85 per M. (By the Bag of 25,000 . . . $1.75 per M.)

### RUBBER GOLF TEES — (For Mat Use)

**Guaranteed the finest quality offered this season**

Standard Length 1¾"—For woods or irons—(also 2" available).

Short length—For irons only, 1¼" ..... Your choice of any size at 10¢ ea., $9.00 per 100.

(SUGGESTION—Use Two Lengths in same Mat.)

**Everything for the modern range. Write for literature and prices.**

**Immediate shipment from our complete stocks of Range and Miniature Course supplies.**

## NORTHERN GOLF BALL CO., 3441 N. Claremont Ave., Chicago 18, Ill.

NATIONAL DISTRIBUTOR OF QUALITY RANGE SUPPLIES FOR 23 YEARS.

## Report 1954 Ball Sales As 2,648,908 Dozen

GOLF ball sales for calendar year ending Dec. 31, 1954 are reported by all members of Golf Ball Manufacturers' Assn. as 2,648,908 doz.

The figure is a little over 5 per cent larger than that reported by the Golf Ball Manufacturers' Assn. for the previous year. The association figures probably account for more than 90 per cent of all U. S. golf ball production, and an even larger percentage of the top quality balls.

As near as careful estimates can determine, the increase in ball sales last year was between one and three per cent less than the increase in number of rounds played in 1954 over 1953. The ball sales now indicate an average of one ball used per two rounds played. In the '30s, prior to present standards of ball cover toughness, paint, inner construction, and course conditions easier on the ball, ball sales averaged about one ball per round.

Greatest improvements have been made in top quality balls, about 70 per cent of which are sold through pro shops. Players have got a good break in longer life of the balls but with the market not doubling since the '30s, and the retail prices being tightly controlled by competition and public acceptance, the situation, from manufacturing and merchandising viewpoints strongly calls for developing more golfers and more golf courses.

## TRANS-MISS TURF SCHOLARS

TransMississippi Golf Assn., assisted by a grant from the National Golf Fund's Golf Day income, is financing two turf technology scholarships at Colorado A&M College. Trans-Miss directors each contributed $50 and all of the $10 per entry fees of the Trans-Miss Seniors' championship have gone into the fund.

The first two students here shown, are dining with Trans-Miss and school officials. L to R: Wright Erwine, student; N. C. (Tub) Morris, Trans-Miss sec.; Bill Tavener, student; Dick Braun, Cherry Hills director; Dean Robert Bates of Colorado A&M; and Prof. A. M. Binkley, head of the school's horticulture dept.

# Beautify Your Course With WHITE Q-ROK Trap Sand

America's finest country clubs and golf courses are filling their traps with Q-ROK—a really WHITE trap sand that will give your course a smart new look. And golfers like the play they get out of traps filled with this de luxe sand. Clay-free and coarsely graded, Q-ROK gives better drainage, helps eliminate puddles, "stays put" in traps and makes them easier to maintain.

As an admixture to your top dressing, Q-ROK sucks water like a sponge and keeps greens playable even after the hardest rain. Greens are also softened when reconditioned with Q-ROK. Send the coupon today for further information and sample of White Q-ROK Trap Sand.

*SHIPPING SERVICE FROM SEVEN PLANTS*

**PENNSYLVANIA GLASS SAND CORP., Two Gateway Center, Pittsburgh, Pa.**

Please send me information and sample of WHITE Q-ROK Trap Sand.

Name_____ Club Title_____

Club_____ Address_____

Town_____ Zone ( ) State_____

# "Scientific Approach" Can Improve Instruction Results

By DAVID M. LILLY
Pres., Toro Mfg. Co.
*(At PGA Annual Meeting)*

UNDER personal instruction, there are actually two facets — the practice tee lesson and the playing lesson. These can be called, "How to hit the ball and How to play the game". When you start talking about how to hit the ball, you, of course, open up a very controversial subject. The controversy has been going on for many, many years, and is very much akin to the controversy that used to go on in golf course maintenance.

Twenty-five years ago, every golf course superintendent was secretive about his own methods, at times he was resentful of the slightest suggestion from others, and, quite often, he was inclined to knock the new ideas. However, today superintendents welcome new ideas and the opportunities to test them collectively and with state agricultural colleges and other turf research operations. This is not mere hearsay either, because I have had the personal satisfaction of watching this "scientific attitude" actually at work at our own company's research and development center. Certainly, we do not get all of the visitors and inquiries from the whole country, but if those we get are a representative sample, I can say with confidence that the "scientific attitude" is spreading like wildfire throughout the United States and Canada.

From this scientific approach, there has been developed a large number of basic principles for golf course maintenance. In addition, there are thousands of ideas now undergoing scientific analysis.

**Don't Knock; Investigate**

However, with the exception of a few instances, there has been little of this "scientific attitude" spreading in golf instruction. One main reason is that too many pros knock the teaching of other pros.

When a pro comes up with an innovation in instruction, another pro should at least see what it is, and not disregard it because it doesn't sound like something he'd agree with. You all know the people who have taken lessons from most of the great teachers and from pros of lesser fame, but have shown no benefit. These guys are bewildered because new teachers began by consciously or subconsciously knocking preceding instructors.

Psychologically, the pros take the focus away from the student and put it on the unsuccessful instructors, leaving the student hopelessly confused. On the practice tee the most obvious thing to teach the average pupil is the fundamentals of golf. I think the PGA has made a tremendous advancement in finding out what some of the fundamentals are, and their movie, in my book, is one of the greatest advances in the teaching game that I have ever seen.

As you know, this movie stresses five known fundamentals:

1. The address.
2. The preliminary waggle.
3. One piece swing, controlled by the left side.
4. Delayed wrist action.
5. The pivot, and how the legs support it.

But these are only the beginning — there are other fundamentals. For example, we are talking about five fundamentals here — one of which is the one piece swing. To me, there is a fundamental which has not yet been defined, and that is the swing itself, of which these other four fundamentals are a part. To my knowledge, there has not yet been a definition of the whole swing itself, and it is the fundamental that we should be trying to find.

We don't hit the ball with a preliminary waggle, a pivot or a delayed wrist action — we hit it with the club in motion — and that club and its motion are part of the whole swing. This is just one of the fundamentals that comes to mind that has yet to be defined, and let's find them by a scientific approach and not by bickering in public and knocking the work of those that are attempting to find the fundamentals.

So much for hitting the ball. Now as to playing the game. I feel that most 100

shooters could play in the 80's if they only knew how to play their own game. It's been my experience that in general, pros have not given enough stress to teaching a man how to play golf. To date, most pros have spent their time teaching their pupils how to hit the ball, with little attention given to how to get around in the least number of strokes. Any weekend you can see hackers attempting to use brassies out of the rough, wedges for simple pitch shots, and No. 1 irons, which they shouldn't even have in their bag, all because they were told, or have read somewhere or have seen the pros rifle the No. 1 iron 220 yards out of the rough or slap a brassie 240 yards out of a trap.

The playing lesson, where the pro teaches the dub how to play the dub's game (not the pro's) offers to the average player more opportunity to learn how to enjoy his own game than any other method. This method of teaching has not, in my mind, received the emphasis that it should, particularly when you consider how it will increase the members enjoyment.

**3-Hole Playing Lessons**

When I speak of a playing lesson I do not mean an 18 hole lesson, as it is obviously impossible for a teaching pro to find the time to give an 18 hole lesson.

Three holes are sufficient to work with a player, and in 3 holes of actual playing an observant can do wonders with the average golfer in teaching him what to do and what not to do. Just one example, you all have seen the 90 shooter skull a wedge over a green when all he had to do was use his three iron and dribble the ball on the green. These 3 hole playing lessons do not have to be confined to one player at a time, but on occasion you can take three of your pupils out for a 3 hole lesson.

The second point I mentioned previously was "printed instruction". Generally speaking, printed material is good. You can read it, and re-read it if you don't understand it, and use it as reference material whenever necessary. For golf instruction, it gives the pupil an opportunity to get some practice and basic understanding at home or elsewhere by himself. He can check the fundamentals he's been taught.

Unfortunately, some of the things the pupil reads are not too good. In your printed instructions, repeat and repeat and repeat the fundamentals. The process of instructing golf pupils is like the process of selling and advertising. Years ago Bruce Barton, one of the giants among advertising men, said, "So the very first simple thing that I would say to you is that this business of advertising is a very constant business, that the fact that you told your story yesterday should not lead you into the delusion of supposing that you have ever told it."

You must tell your pupils over and over and over again what you want them to know until everything you've said becomes an unconscious part of their action. And if I may make one further reference to the words of this master advertising man, he summed up the talk I have referred to like this: "Be genuine, be simple, be brief; talk to people in language they understand; and finally, and most important, be persistent." This applies to the written word as well as any verbal instruction.

**Earning from Tournaments**

My third point is the performances before the public in tournaments. While a public appearance seems to be quite distant from the standpoint of golf instruction, it is actually quite significant. It's here that the student of golf gets to see the pro in action. His shots, his swing and his choice of clubs are critically analyzed.

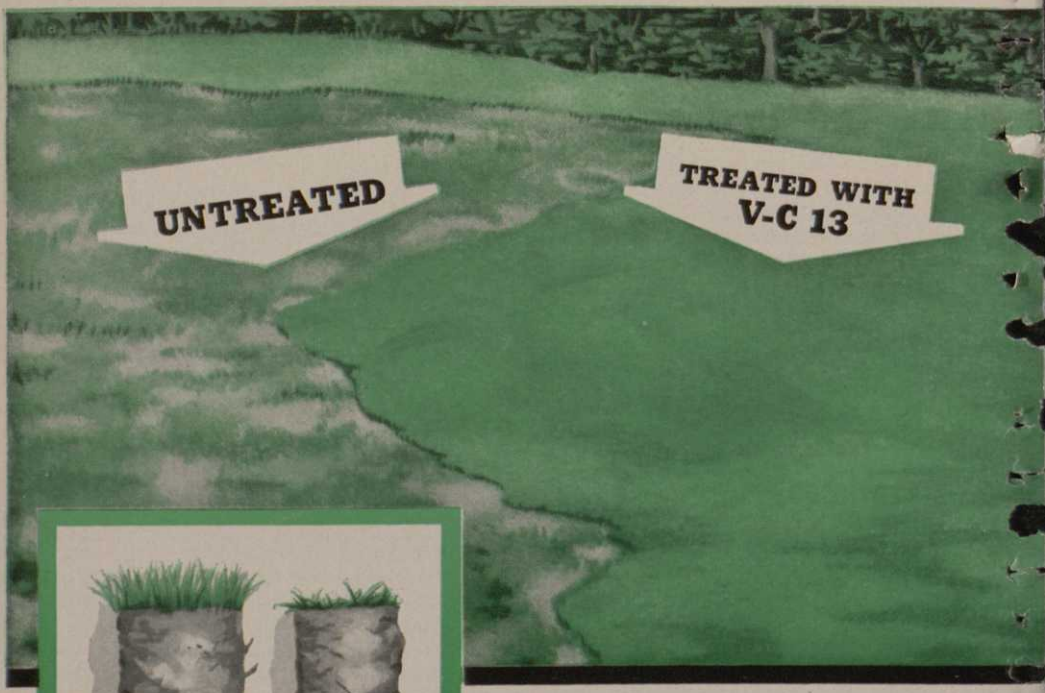
The student goes home with a hat full of knowledge that he can put to good use if you can get to him quickly and show him how to use this knowledge.

However, he also picks up some bad habits. In a city following a PGA tournament, there is a noticeable slowing down of play as the 90 shooters start emulating the 60 shooters. It's true that golf is a game of concentration and relaxation, each shot must be planned and well thought out, but the pro in a tournament doesn't need five minutes to read every green or check the wind.

But, let John Dub follow you around and watch you put on a show, and he'll be doing the same thing his next time out. It really isn't necessary to stretch the time. For example, in last year's PGA, the Harrison-Burke match took only three hours and a quarter, and if they hadn't been held up on several holes, they would have gotten around in under three hours. They managed to score a 66 and a 67 — by far the lowest rounds of the day. Unfortunately, this round was not typical, and the average round of golf has gone from three hours to four hours.

From my point of view, I'd like to see the game speeded up and I should think

# Amazing New Discovery Destroys Nematodes




**To destroy nematodes** on established greens, just spray V-C 13 on the turf and water it in. As nematodes are killed, grass roots begin to recover. Within two months, treated grass usually has made a strong comeback, with thick, green turf.

**These grass plugs tell the story.** Both were taken from the same nematode-infested turf, after part of the green was treated with V-C 13. The long plug on the left shows how V-C 13 stopped nematode damage, helped strong roots grow deep. The grass plug on the right, untreated, made only short stubby root growth.