

The sand used in topdressing mixtures in Chicago and vicinity contains up to 30 per cent lime carbonate. The greens there get a generous application of lime every time they are topdressed.

Iron chlorosis was bad on some greens. This was discussed in August GOLFDOM and need not be repeated here. Excessive soil moisture and high content of readily decomposable organic matter accentuate the condition. It occurs most commonly after heavy downpouring rains, or where overwatering is common practice. Overliming and the excessive use of soluble phosphate fertilizers are other likely contributing factors. Iron chlorosis is most common on the velvet bents. The topdressing used on it should be rather sandy with little or no organic matter, and excessive amounts of water should be avoided.

### Scald Blamed for Damage

Scald was blamed for the loss of much turf. This loosely applied term is used to describe collapse of grass in large irregular sized areas where any one of the commonly known diseases was not to blame. Excessive soil moisture is the basic cause, and is the reason why algae (green scum) accompanies scald. After the grass disappears, or becomes thin enough to expose the soil surface, algae multiply rapidly. Water from stagnant ponds is usually blamed as the source of algae, but these minute plants are present in all soils. They are held in check so long as turf density is sufficient to exclude light from the soil surface. Algae must have sunlight, like every other green plant to make vigorous growth.

The characteristic foul odor of soil in scalded areas is further evidence of a temporary waterlogged soil condition. Ex-



Three gang spike discer on green. This tool helps prevent dry spots. Makes greens take water better but is ineffectual after dry spots develop.

cessive wetness may be due to any one or more of several causes. Poor surface drainage, principally low lying pockets which hold water, ineffectual subsoil drain-



Aerifier on green, showing raised turf around each hole. Rolling lightly in opposite direction following removal of plugs puts green in shape for immediate play.

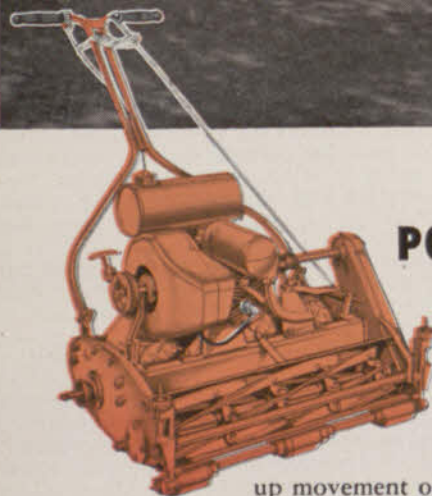
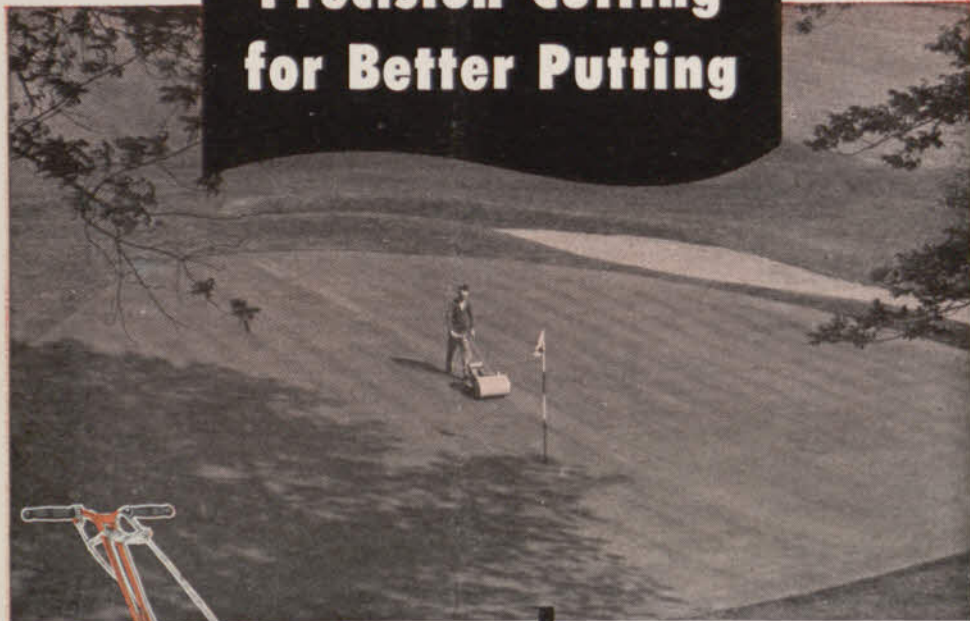
age, due to an impervious clay subsoil, bad air drainage, excessive soil acidity, soil compaction, imbedded layers of sand or clay near the surface, excessive amounts of peat, matted turf, and a network of tree roots near the surface may be responsible for scald in midsummer. Now is the time to correct any one or all of the causes, especially on greens which were bad in 1949.

Lime was used quite generally on ailing greens. It produced startling results on those which were strongly acid, and on excessively wet ones, irrespective of soil reaction. The ailing grass invariably started to recover. The immediate and startling effect at times obtained from a little lime on diseased and scalded turf is hard to explain, but may be due in part to hydrate's marked effect as a drying agent. It seizes and holds part of the free soil water. On wet greens lime may help in that respect and chemically by precipitating soluble organic decomposition products, some of which might be toxic in the soluble state.

The repeated use of lime hydrate in light doses is not apt to cause bad secondary effects so long as soil reaction is in the range of pH 7 or below. But on alkaline soils, particularly when reaction is pH 7.5 or above, the repeated use of lime may induce deficiencies of iron, manganese, copper, or other so-called basic elements. The only time lime hydrate should be used on these soils is when algae puts in an appearance after a period of heavy downpouring rains which saturate the soil and make the turf thin.

One of the \$64 questions which has been asked many times and never satis-

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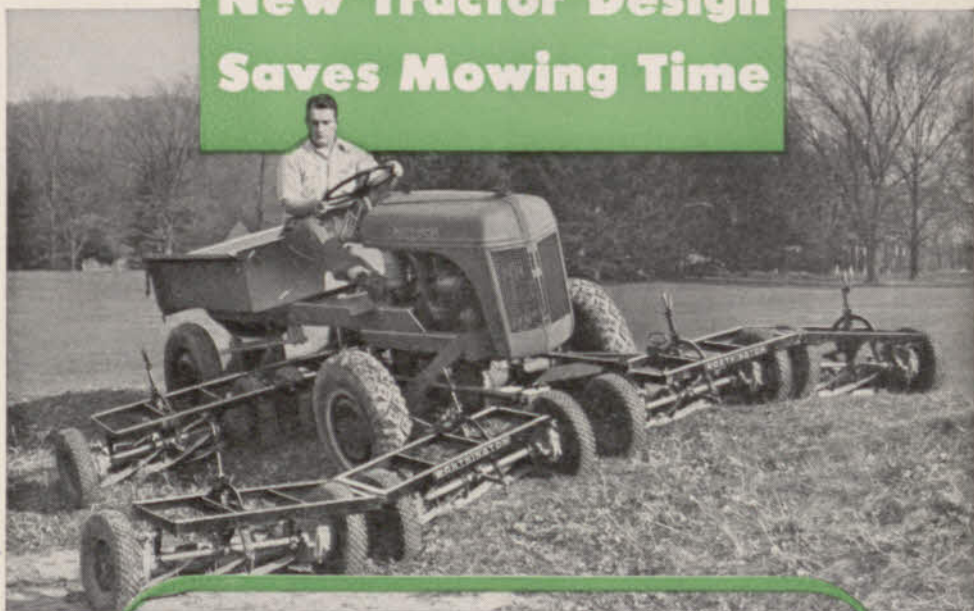
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Racine, Wisconsin

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Johnston Lawn Mower Corporation, Ottumwa, Iowa

## New Tractor Design Saves Mowing Time



### Worthington Model F Chief

THE design of the new Model F Chief represents a big step in the development of better golf course mowing equipment. Here's what puts this unit so far ahead.

Cutting units mounted in front, cut the grass before tractor wheels compact it — no streaking. In addition, driver sees what he is doing without looking back, guides cutting more accurately, reduces width of overlap — gets the

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## WORTHINGTON MOWER COMPANY

Stroudsburg, Pennsylvania

SUBSIDIARY OF JACOBSEN MANUFACTURING COMPANY, RACINE, WISCONSIN



factorily answered is—"How can we be rid of poa annua?" When poa annua is the only kind of grass on all or on any part of the green, the places become bare ground when it is lost during hot weather, or during bad winters. Its loss is not serious when there is plenty of bent grass left to provide coverage.

Some contend that spring applications of nitrogen should not start until after the poa annua produces seeds and commences to weaken. This seems logical where the proportion of poa annua is large. Others believe that greens should get plenty of nitrogen right from the start in the spring. This contention seems like sense when the proportion of bent grass is high. The nitrogen gets it off to a good start so it can resist infestation. The correct answer will be forthcoming one day, because there are examples of greens which were mostly poa annua, but are now pure bent for all practical purposes. The change occurred without major rebuilding.

Attention was called to the prevalence of cut worms and sod web worms, etc. in August GOLFDOM. Worms and even grubs were more troublesome than usual. Quicker and better control was obtained with Chlordane than with lead arsenate. However, this does not necessarily mean that there is no place for lead arsenate on greens. Many greenkeepers still use it in late spring to check earthworms and grubs, and also to curb crabgrass. High cost will stop extensive use on fairways, but should not necessarily be the reason on greens. The area involved is not extensive so the cost is not prohibitive.

#### Watering Practice Appraised

Excessive wetness from overwatering or from too much rain was bad. Early morning watering appeared to be best. Heavy night time watering seemed to make brownpatch worse. That would seem only reasonable because the grass stays wet from the time watering stops until several hours after sun-up.

There are several other good reasons for the early morning choice. Workmen see what they are doing during daylight hours. It is easier to obtain better coverage and avoid overlaps. When sprinklers overlap in the center everytime the green is watered the turf in that part of the green is bound to weaken and become bad. Dew is absent or disappears in areas where the soil underneath is dry. The absence of dew is one way to spot the drier parts of the green. When root systems are shallow, early morning watering carries the grass farther into the day before the turf starts to footprint and turn the characteristic grayish-blue color.

Tests by Dr. Hoffer show the presence of nitrates in guttated water on the grass leaves. Guttation occurs during the night. The plant physiologist uses the term to describe exudation of water from an uncut plant surface. According to Dr. Hoffer, the nitrates are reduced to highly toxic nitrites. Light watering in early morning to wash the nitrates off the leaf and into the soil is most essential, in his opinion.

Mid-day wilting of grass on greens has been an increasing problem for some time. It was worse this year than ever before.



New white roots in aerified green. The cultivating effect of spoons produces roots over an area of more than an inch in width. Picture taken less than month after aerifying.

Wilting is inevitable on windy days in hot weather, when grass roots are shallow. There will be quick and bad loss of grass unless a little water is applied promptly when the grass turns blue and foot prints badly.

It was necessary to watch greens for wilt on Saturdays and Sundays, as well as the other five days in the week. Grass does not observe the 40 hour week. Greens maintenance is a seven-day job during bad weather. On two bad weekends in August the man in charge at one club with 36 holes found it necessary to keep 12 men on the job all day Saturday and Sunday. Although there were bad greens on nearby courses, the turf on his greens came through without any serious blemishes.

Wilting occurred this summer on greens where root system seemed to be within reach of water. It happened after drenching, downpouring rains. The grass turned a reddish color, then it withered and died. Those who applied a little water promptly, before the reddish color developed, saved the grass—even though there was

water in the cups. A delay of half an hour was too long and too late. It would seem that badly needed water was absorbed directly by the grass leaves.

After witnessing this puzzling type of wilt, a statement made by one of the speakers at the Mineral Plant Nutrition Symposium at the University of Wisconsin in early September seemed significant. He discussed the relation of physical soil factors upon the growth and behavior of plants. According to him, oxygen must be present in the soil before plants can assimilate water, or absorb and utilize soil nutrients. Marvin Ferguson of the Green Section, USGA, called my attention to a similar statement made by Dr. D. R. Hoagland in one of his published lectures. Tomato plants grown in un-aerated water cultures wilted while similar ones grown under exactly the same conditions except that a minute amount of water was bubbled through the culture solution showed no signs of wilt.

### Work for Deeper Roots

The search for the answer to deeper root formation has emphasized the nutritional side. That grass must have all the chemical elements required for growth is obvious. Fertilizer programs have not been universally bad, although the tendency by some has been to stint on potash. The need for free oxygen in the soil has been stated time and again, but seems to be overlooked and lacks popular appeal. The problem of providing roots with oxygen is being further complicated each year by soil compaction as a result of increased traffic and the use of power equipment. Matted turf is another reason for shallow roots.

The layman looks upon soil as so much dirt. Actually it is more than that. A highly productive soil is a mixture of a solid, a gas, and a liquid. The mixture is about one-half solids, one-fourth air, and one-fourth water, so the voids are about equal to the solids on a volume basis.

The framework of the soil is most important. There are the capillary and the non-capillary pores. The smaller capillary ones provide the plant with moisture. The larger non-capillary pores contain the air in a well-drained soil, and are the channels for the rapid movement of water. In the distant past the lowly earthworm helped provide these passageways. They are no longer tolerated because of the objectionable casts they throw; and rightfully so from the players' point of view. These channels are being destroyed by overwatering, by the traffic of increased play, and by power mowers and other types of machinery. Cultivation of a sort

to improve the structural soil framework is badly needed on many greens and is sure to prove beneficial on others. The various spikers, the hollow-tine fork, the drilling machine called the "Turferator" and the spoon of the F. G. Aerifier represent attempts to improve soil physically and increase the amount of air in the soil.

The spikers have their place, but the holes are too shallow and too small to make profound changes. The hand forks are good, but too slow. The Turferator does a fine job. The deep white roots found in the holes during all of the next season are evidence of that fact. Surfaces are reasonably good for play right after drilling, but it takes two men half a day or more to do an average size green.

The F. G. Aerifier is fast and does a good cultivating job. The objection raised by some is the condition of the playing surface after the job is finished. Art Twombly at Pelham demonstrated that it need not be that way. He used the half-inch spoon and operated the small tractor at a snail's pace. Then he used a light greens roller in the opposite direction to press the raised turf back into place. A leaf sweeper was used to remove the plugs, then the green was rolled lightly and cut. Players thought the operation had no bad effect on the putting quality of the greens. This fall and next spring are good times to drill or aerify the greens. The operation may seem costly, but those who have had experience say the benefits justify the expense.

### ANNUAL TURF CONFERENCES

- Oct. 24-28—American Society of Agronomy Annual Meeting, Milwaukee, Wisconsin.
- Nov. 28-30—Oklahoma-Texas Turf Conference, Tulsa, Oklahoma.
- Jan. 30 - Feb. 3—19th Annual One Week Turf Short Course, Rutgers University, New Brunswick, New Jersey. (Tentative)
- Feb. 27 - Mar. 2—19th Annual Turf Conference, Pennsylvania State College, State College, Pa.
- Mar. 6-8—Midwest Regional Turf Conference, Purdue Univ., Lafayette, Ind.
- Mar. 10-11—Annual Turf Conference (Concluding 10 Weeks Winter School), Univ. of Massachusetts, Amherst, Mass.
- Mar. 13-15—16th Annual Greenkeepers Short Course, Iowa State College, Ames, Iowa.
- Mar. 14-16—Third Annual Turf Conference, Cornell University, Ithaca, N.Y.



In pro shop at Medinah CC (Chicago dist.) Asst. Pro Tom Cullinan, fits a member with golf shoes in corner of pro shop where shoe display and stock attracts business.

## Shoe Business As Profit Maker for the Pro

By ERNIE SABRAYAC

Golf shoes are the greatest "sleeper market" afforded the golf professionals today. Now, where the pent-up demand for playing equipment has receded to the normal stage but where the cost of operating a golf shop has not, there has to be a filler to take up the gap. The pro can take up that slack with shoe business which is just as natural to his selling as balls and clubs.

It takes no recalling of history to explain how the golf professional switched the retailing of fine golf equipment from establishments downtown to the professional shops. The word "professional" has come to mean what the word implies and as a result the pro is now the doctor for your member's ills and needs. The same reasoning and sales efforts behind the sale of golf shoes will elevate the pro

into that enviable position you now hold in the sale of other equipment.

The natural reasons for selling shoes in a pro shop has been grasped already by many pros and the increased sales from year to year has become a big part of pro income. But for the pro who hasn't tested this new venture I am going to try to lay down some rules to follow. If you adhere to them you will find yourself with a brand new income.

### Rules for Shoe Buying

First, you must definitely "buy" right. That means that you must go along with merchandising policies that you follow in the regular purchase of your balls, clubs, etc. Your first job is to be sure you buy "Quality," for the first sale that you make is the big test. A lot of pros will immediately say some shoes are too high



and can't be sold. How can you reconcile that with the fact that practically all merchandise sold through the pro shop today is quality and quality today means a high price tag. When a member buys shoes, he wants quality along with the rest of his equipment. Remember, golf is his hobby and if he's a natural sportsman he wants the best for his afternoons of relaxation. Anyone who ever has had sore feet from a poor pair of shoes has made up his mind that any price is not too high for foot comfort.

After quality you must be competitive. That means buying from a manufacturer of shoes. Everyone today is price-minded and too much of a distribution mark-up in the price of shoes will make the shoes too costly.

Then there is style as an important factor. It becomes increasingly clear every day that the best way to part a member from his hard earned cash is to offer him something new in styling; something a little different than has been offered in the past. Try to select your supplier from the standpoint that if a member wants something that is entirely different from regular stock pattern, the manufacturer will be in a position to supply it. Copies of shoes worn by today's leading stars of the links have been sought after by many members. After you have selected your shoe for style, quality and competitiveness, then your problem is how to buy and what to buy and this is the most important element of all. It is the bug-a-boo that has caused a lot of pros to shy away from the shoe business before they ever get started. It looks like a big job but really is not.

### Selecting the Stock

First of all, the easiest way to sell shoes is to have a stock. We have found that a pro can set himself up in the shoe business with about 30 pairs of shoes at the average club. Most pros make the mistake of buying these shoes in several styles instead of concentrating the bigger part of the shoes in two styles. A plain brown or tan and a two-tone. For example, if you size these two chosen styles in the "gut," which is the vernacular of the shoe man, which means that the numbers are to be stocked in popular sizes only, you then put yourself in a position to deliver shoes right away. That is most important. We suggest that you stock each number with one pair from size 8½ through size 11. Also, steer clear from stocking widths other than C or D. That means that if you have stocked the two styles selected as suggested you then have a size set-up that shoe manufacturers' records show should allow you to start delivering shoes right away.

A lot of fellows ask, what about the guy with size 12AA, etc.? That goes back to the selection of the source of your shoes; pick a source that carries shoes in stock for your needs as you would pick a club manufacturer for the same purpose. Remember, chances are that the same customer wanting that odd size would have to wait for it at his favorite shoe store and that customer expects to wait for that odd size.

The idea is that if you have a stock of shoes on hand, then an explanation that his size is out of stock at the moment satisfies him as he sees that you are in the shoe business and in a position to get his size quickly.

You now see that the basis of stock of your basic stock styles is 26 pairs to round out the 30 pairs mentioned. Buy sample pairs of four other styles to show. Buy



Frank Walsh (R), pro at Red Run GC (Detroit dist.) fits club pres., Paul Carrick, from a profitable corner of Red Run's shop.



Shoes make a display that fits in the well run shop at Plum Hollow GC (Detroit dist.). Pro Bill Uzela (R) shows a shoe out of stock to mgr. "Red" Large while member Ed Lauer looks over a shoe he fancies.

these also in popular sizes to be able to deliver if the customer takes a fancy to them. It is not feasible to stock every style and a customer will wait for a shoe that is different. Remember, though, to sample shoes that are in manufacturer's stock so that they can be delivered quickly.

Another main point is to have this stock on hand at the opening of the season. This is just as important as having your initial order of clubs, etc., at this time as this is when the customer's enthusiasm for buying is at its peak.

Now that you have the stock carefully selected and sized accordingly, the problem of selling the shoe comes next. Always sell the quality features of the shoes first. Your supplier will undoubtedly acquaint you with all these items when he sells the shoes to you. Then the big thing is to fit the shoes correctly. In that respect, your supplier also will give you hints as to how that is done. A lot of pros have bought automatic measuring devices which have helped them not only in fitting shoes but has added a distinctive air of the shoe business to the pro shop and gives the customer added confidence that the shoe is being fitted properly. The next tip is to always be sure that the shoes are large enough. For example, if a customer wears a 9½B

in street shoes it is entirely possible that a 10B would be more comfortable in golf shoes for the reason that most people wear a heavy golf sock. Keep in mind

that sizing of shoes can be flexible although most quality manufacturers use a last in making golf shoes that allows for those things. If you fit a customer properly in a quality shoe you can count on him being a customer of yours for a long time.



Ernie Sabayrac, Golf Promotion Representative, Field & Flint.

After you have sold your first pair it is imperative that you re-order that particular size right away so that you can keep your stock up. That is the most important item that faces the pro; always having a representative stock of shoes on hand. In seasonal jobs it would be my suggestion that you stop re-ordering for stock around August 1st, thereby allowing your stock to dribble down to practically nothing and what is left to be used as a basic stock to size in for the coming spring.

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that many club members own 2 pairs of golf shoes, but own only one golf bag. That means that the chances of selling a pair of shoes should be greater than selling a golf bag every year.

2—It has also been proven that sports-wear of all descriptions can be sold in the pro shop when it is styled right and competitive, the same holds true with shoes.

3—Your member would rather buy these shoes from you because he has found out that your advice in other matters pertaining to golf merchandise has been "Professional" advice and therefore is reliable.

4—The fact that everyone that steps off your first tee has a pair of golf shoes on definitely makes that player your natural customer for shoes as well as clubs and balls.

5—Shoes are a profit item that you cannot afford to overlook.

#### PORTABLE PRO SHOP BUILDS SALES AT GOLF TOURNAMENTS



View of the outdoor pro shop during the Tam O'Shanter (Chicago district) championship tournaments last August. This method of merchandise display gives the public an opportunity to see the latest of the finest in golf equipment and accessories. Johnny Spence originated the idea of employing this "open" pro shop type of display for the benefit of the public attending major tournaments. At PGA sponsored events Spence takes complete charge of the tent for the home pro. The merchandise of approximately 40 manufacturers was represented in the Tam pro shop tent including: Wilson, Spalding, MacGregor, Acushnet, Burke, Kroydon, Jackman, Rutledge, Great Lakes, Walter Hagen, U. S. Rubber, Florsheim Shoe, Foot-Joy Shoes, and various sports-wear representatives.

Wilson did O.K. in ball and club use and prize awards of Wilson equipment in San Francisco Examiner's hole-in-one contest which drew more than 3,600 contestants and in Niagara Rapids AC ace contest held at Hyde Park GC, Niagara Falls, N.Y. Harry Hayward, director of SF Examiner tournament for 17 years, says history of the competition discloses that odds against a hole-in-one are 15,704 to 1.

## Professionals

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