soil contains a large amount of darkcolored mineral particles, it will be dark even though deficient in organic matter.

A red color in the soil indicates the presence of iron oxide—which is the same as rust. When iron oxide takes up water (becomes hydrated) it gives the soil a yellowish color. In well-drained soils the reddish or yellowish color is visible even though organic matter is present. In poorly drained soils, the iron oxide loses oxygen (is reduced) and it then gives the soil a bluish color.

So the color of the soil can indicate the condition of drainage and amount of oxygen present. In other words, it gives a clue to soil structure. Texture refers to the size of the soil particles; structure refers to the arrangement of the soil particles. A sandy soil is made up of single grains. If a clayey soil is in a condition so the individual particles act as single grains, then there is not large enough pore space because the clay particles are so very small and fit too close together. It is desirable that the clay soil have a crumb structure-that is, the soil should be managed in such a way that many particles of clay or particles of clay and organic matter will group together and work as a single unit or crumb or granule—whatever you choose to call it. These larger granules have more space between them.

If soils do not have enough pore space, they become very compact and plant growth suffers from a lack of oxygen. In a dry soil the spaces between particles or granules are filled with air. But if soil becomes excessively wet, then all the pore space is filled with water and plant growth suffers. For good plant growth, the pore space should contain both air and moisture.

Pore Percentage Significant

For proper movement of air and water through the soil, a good percentage of fairly large pores is desirable. A poorly granulated clay soil contains many spaces between its numerous particles, but they are too small to permit proper circulation. A coarser-textured soil may contain a smaller quantity of spaces, but they will be of adequate size to permit passage of air and water.

Even though the texture of soil is such that there is a desirable number of moderately large pore spaces, this condition of good soil structure is not a permanent condition. Even in the case of agricultural crops, where soil can be plowed each year, the soil tends to become compact in the course of one growing season. Because of rainfall and settling of the soil, fine particles gradually fill up the pore spaces and soil becomes too tight for good growth.

Many areas planted in turf have been in use for years and years, without any operation being carried out to maintain the physical condition of the soil. Fertilizer and lime may be applied in an attempt to maintain proper chemical soil conditions. But these measures may be of lutle value when soil structure is neglected.

The physical condition of the soil definitely influences its chemical and biological activities. The most obvious situation, of course, is that plant roots grow where they can obtain air, water and plant foods. If soil is compact, these materials cannot penetrate very much beneath the surface and root growth is bound to be shallow. In some cases, thatched and matted conditions keep materials from even reaching the soil. Or, a layer of material of a texture different from the surface soil will interfere with circulation through the soil column and thereby stop root growth.

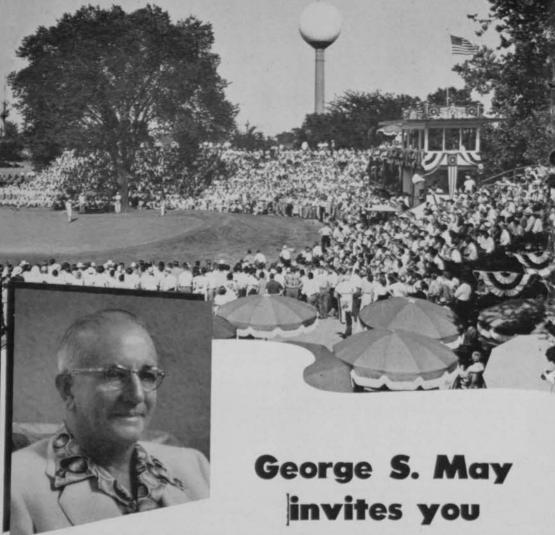
Oxygen is needed in order for roots to function properly and absorb food. Some plant nutrients are not available to the plant until they have been acted upon by soil microorganisms which need air to live. Physical soil condition is an important factor determining whether or not soil will be satisfactory for plant growth. It is essential to carry out a maintenance program which includes not only the maintenance of soil fertility by the addition of chemicals, but also maintenance of good physical characteristics. Mechanical methods such as aerification are the most economical way to maintain and improve physical soil conditions.

Proper aerification not only makes openings down through the turf so materials can penetrate, but also serves to loosen soil around the openings so materials can move laterally. Aerification breaks through layers beneath the surface and brings up soil to aid decomposition of an organic layer at the surface.

More and more, maintenance of turf areas is becoming recognized as a specialized job, and specialized equipment is needed to meet its requirements. Surface disturbance must be kept to a minimum, yet machine operation must be rapid enough and dependable enough to be practical. Cultivation should be deep and thorough—soil is most effectively loosened by the removal of soil cores. Discs and spikers were once the only implements available for soil improvement, but modern equipment offers many advantages over these methods.

Nature provided the soil—the all important mixture of mineral and organic particles. Probably you spend money and time applying materials to maintain and

(Continued on page 60)



to the
World's Richest Golf Tournaments
The Game's Outstanding Exhibition of 1950

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All-American Golf Tournaments and the World Championship of Golf are conducted under the personal supervision of George S. May and his Company, now celebrating its 25th year of leadership in the business engineering field.

Again this year, over the perfectly groomed greens and fairways of Tam O'Shanter's famous championship course, the greatest names in golf will be competing for the biggest prize money in the game's history. Unquestionably these two Tam O'Shanter tournaments present golf's most thrilling competition of the year.

Qualifying Rounds for Men Professionals, August 3

> Men's Amateur August 4, 5, 6, 7

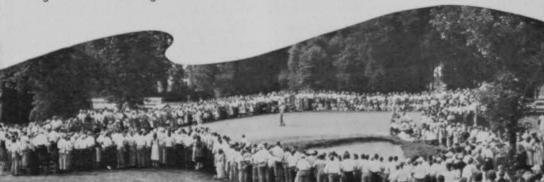
All-American Men's Professional August 5, 6, 7, 8

Women's Open, August 3, 4, 5, 6

WORLD'S CHAMPIONSHIP, ALL DIVISIONS, AUGUST 10, 11, 12, 13

Here you can see, and study, the low scoring technique of the game's most efficient men and women shot-makers—in competitive action or on Tam's great practice tee. And, every comfort and convenience awaits you in Tam O'Shanter's ultra-modern clubhouse, noted throughout the golf world for its beauty, service and model operating efficiency. Make a date now for the whole family to enjoy the thrills of this year's golf classic.

MOTHER — DAD Here's an unusual opportunity to get youngsters started right in "The Game of a Lifetime". Bring them along to see what makes America's golfers the world's greatest.



Local Newspaper Tie-up Aids Popular Father-Son Event

By J. LEWIS ROBY

Indiana is not the leading golf state in America, nor is Anderson the foremost links community in Indiana, but under the sponsorship of its leading newspaper and an enterprising young golf course, that industrial city has developed a solid approach to the promotion both of golf's future and of the all-important companionship that should exist between every father and son. This summer, on the traditional Sunday following Labor Day, the Anderson Daily Bulletin and Edgewood Country Club will present their fifth annual Madison County Father-and-Son Golf Tournament.

Civic- and youth-minded individuals are responsible for the novel idea, which is the highlight of each summer for golfers from "seven to seventy," coming as it does on the day before school resumes. It is the last fling for kids who wistfully long for many more weeks for day-long golf instead of those first few days of half-hearted attempts to get back into the scholastic saddle. And for Dad, it's his last day with his son or sons, except for scattered week-ends, for nine long months.

Edgewood, a rapidly-improved golf course, was five years ago just beginning to forge ahead in financial as well as physical health. It is a long, rolling layout of nine holes and offers a true test with its small, elevated greens and variety of shots. Being young, the layout challenges and instills a pioneer spirit in the hearts of those who have sought to make it something. This pioneer spirit, together with the civic- and youth-mindedness mentioned above, has helped develop the father-and-son event.

As with most good ventures of this type, persistent plugging away was necessary to establish the tourney. Appropriately, representatives of the Anderson Country Club and the municipal Grandview course were included by Edgewoodites on the original planning committee in 1946. Altogether there were C. O. Davisson and Lew Roby of Edgewood; Pro Wayne Hensley, Clyde Armstrong and Red Wolfe of Grandview, and Assistant Pro John Nelson and Tony Templeton of Anderson CC.

Newspaper Sponsors Event

They set to work with a will and found an eager sponsor in The Bulletin, an evening newspaper published by George D. Crittenberger, no mean golfer in his own right. Thereafter the idea caught on and spread like wildfire as business-harried men grabbed at so splendid an opportunity to spend a whole day on the links with their "carbon copies" and that evening with them at the awards banquet. Yes, this one day the ladies of the family were strictly bystanders. (But a prouder, more beaming gallery you never saw!)

Competition was, and is, based upon the total score of any father-son combination. A father may compete with as many sons as he chooses, and for no more than his own single low entry fee plus one

each for the boys.

In order to equalize the affair among the sons because of the wide span of their ages, two brackets originally were instituted: the Junior for those through 17 years, and the Senior for sons who were 18 and over. The following season found three groups — Junior, Intermediate and Senior, and so great has been the superiority of the 16-17 years group that the fifth renewal this year will carry four classes: Prep for lads through 11, Junior for 12 through 14, Intermediate 15 through 17, and Senior 18 and over.

Here's an example of how it has evolved. . . In 1946 there were 82 out for the inaugural. Mark Williams and 16-year-old Bob, the first of the line of successful "under-18ers," teamed to fire a joint 155 on the par 72 layout. Only 11 over par between them, Mark had a 79 and Bob a neat 76. A year later, the only Senior duo to succeed came through with an identical total as the son once again beat out his Dad. Bob Gibson, barely 18, used 77 shots to edge his father, Chet, by one stroke. This trend was interrupted in 1948, but the Intermediates came back into their own, when Floyd Poore posted a 78 and Kent, a mere 15 years old, made the trip in 80, for a winning 158. To prove it was no fluke, they repeated last summer with Kent, now 16, lopping six strokes off his game for a blazing 74. Floyd added 77 for a record 151, seven lower than their 1948 total, and once again a son had beat his father.

Sons, Low Scorers

Therefore, in four years, there has been but one Senior winner and only once has the winning father scored better than his son. And the Intermediates get still another good crack at the title this September, Kent being but 17 and still "gunning" for Dad.

This besting of their Dads by Masters Williams, Gibson and Poore is symbolic of the entire affair. It is no exception to the rule when Junior comes into the clubhouse with a score lower than Pop's. Throughout the summer the men's locker room echoes with "Doug, is Donny going to hold you up again this year?" or "Hey, Harold, is there any chance of you beating both your father and two boys this time?" (And just for the record, the youngsters get in the same digs, pertaining to their fathers, as they spend the vacation months diligently preparing for the big event.)

The tourney's most famous family is that of the Oliver and Harold Campbells. Oliver is the grandfather, and Harold the father of two stalwart young lads. Therefore, for one entry fee, Harold gets a three-way chance at the title — one as a son and two as a Dad. In these days of costly clothing and food, it is a rare advantage to a man with a large family!

Both Campbell boys, Joe and Eddie, can be depicted along with Don Granger, city junior champ; Donny McGregor, young Poore and many, many others as living examples of the value the Madison County Father-and-Son Tournament has been to golf's future in that region. With their fathers' help, all are potential recordbreakers of the 1950's. The influence that the tourney has had on them is terrific, and shows up in the Anderson High School golf team. The school already holds the

never-approached four-man record of 292 strokes in rugged North Central Conference championship competition, and all four of the now-grown boys — Oscar Melson, Charlie Laughlin, Bob Skiles and Harry Forse—are veterans of the Father-and-Son tourney.

Since a record 97 turned out for the 1949 chapter, the field this September 10th will probably exceed 100 for the first time. It will be seeking to match these winning scores of last season: the Poores' 151 in Intermediate play; an ideal 156 by none other than the "pioneer" Mr. Davisson and son Dick in the Senior bracket, and an unheard-of 186 for the Juniors by the Shannon Chambers duo. Only 10 years old, Shannon, Jr., was a four-year veteran of the meet!

So once again the time approaches. Gazing back over the years, the original committee (pared to six by the untimely death of Mr. Armstrong) recalls the first trying days with sausfaction. They remember that it was no easy road, but then there is no easy route to a good thing. Their only hope is that the fatherson idea will prosper not in Anderson alone, but throughout the nation. They are eager to help anyone who would like to see the same thing in his own town. The city need be neither big nor small. The size of the citizens' hearts is what really counts, and in that respect the golfers of Anderson, Indiana, feel they have to take a back seat to no one.



Tony Templeton, master of ceremonies and tourney committeeman, awards the coveted championship trophy of the Madison County Father-and-Son Golf Tournament to Kent and Floyd Poore, 1949 winners. Left to right around the awards table are Shannon Chambers, Jr. and Shannon Chambers, Sr., the Junior champions; Kent Poore, Mr. Templeton, Mr. Poore, Dick and C. O. Davisson, the Senior kings, and Howie Schulz, former player-coach of the Anderson Packers, professional basketball team.

Adjust to New Conditions to Keep Pros in Market Lead

By HERB GRAFFIS

In keeping a fairly close watch on retailing operations as reported in the sales and advertising magazines I get the conviction that pro merchandising compares very well with the merchandising of

smaller retailers in other fields.

Pro credit also compares favorably with that of other smaller retailers. Credit, of course, is based on ability as well as integrity. The pro can be 100 per cent honest but if he is deficient in business ability—or if his club isn't much as a market—chances are his credit won't be up to standard. So he's got to develop his business ability, increase activity and buying at his club and take advantage of discounts or he won't register up to the average of the pro business field.

If his credit isn't good his chances for getting a better job aren't any too hot. Club officials may not know a lot about appraising some of the qualifications a first class pro should have but the officials generally know all there is to know about credit rating as a mark of business ability.

When GOLFDOM started, more than 23 years ago, we began making a strong point of improving pro credit. Some of those pioneer Scotch and homebred pros were fundamentally thrifty and good canny businessmen. Their credit was tops. Others depended too much on the manufacturing competitive situation for financing and dangerously liberal credit. It took years, and volumes of educational material in GOLFDOM, to correct the credit picture and bring it up to its present satisfactory status.

Credit Tighter Now

One thing that improved pro credit was the unwillingness of manufacturers to allow themselves to be played against each other. One manufacturer might be easy with credit and his goods, when sold by a pro, helped to pay what the pro owed to another manufacturer who had a tough, smart credit manager. The pro couldn't be blamed too much for taking advantage of the soft touch but the practice backfired on all pros by making the quick cash business of the big stores desirable to manufacturers. That credit laxity also backfired on pros when pro merchandise unsold came back to manufacturers and was unloaded as distress goods through stores.

Looking back at that phase of golf merchandising history it's plain to see that the stores got big in the golf business because some pros didn't know their business.

What sold best in the stores was the merchandise for which the pros had built up consumer acceptance. On other golf merchandise the stores have had to spend fortunes in advertising and have operated at narrower margins to sell to the market. A rather large part of the store market consists of golfers who haven't got pro shop services available at all, let alone conveniently and attractively available.

Supply Oft Exceeds Demand

Fundamentally, what makes golf merchandising demand smart work is that the manufacturing capacity for golf goods normally exceeds the market demand. That situation isn't unique in golf. year the club sales situation was abnormal due to popular new models of irons and a prolonged strike at one of the large shaft maker's plant. Those circumstances always call for a test of real merchandis-ing brains and effort. Tough tests are always going to keep coming up. Pro golf went through one of these deals when the steel shafts displaced wood. There's some experimenting now with a synthetic shaft but it looks long enough away to have the switch, if any, accomplished without threat of a violent disruption in golf club marketing. There was a slight disturbance in pro shops-and far more among manufacturers—when the American golf ball standard was changed. But generally the annual changes in models, of clubs particularly, are simply the sort of switches that all dealers in fashion goods must expect.

Where the pro gets caught short is in having any stock left over as his season ends. The stores have a wide and somewhat undiscriminating field of customers who buy largely on price. The stores are accustomed to cutting prices to convert merchandise into cash. The pros aren't. The pro is inclined to figure that if he sells a customer a set of clubs at a reduced price at the end of a season he's beating himself out of the sale he might make at standard price to the same buyer when next year's models come in. He also figures that if he sells a set of clubs to a member at the start of a season and a similar set of clubs at a lower price four months later, the first buyer is going to





Ideal for club house area, tees, fairways, greens. Ruggedly built of expanded metal and well reinforced to stand hard use.

... to keep your grounds clean

A good container gets itself seen, used. That's where Wheeling Municipal Refuse Container scores. Pleasing lines, colorful finish. Wide, open top invites use. New allweather coating lasts and lasts. Cost LOW. Investigate.

READY TO SHIP IN SMALL OR LARGE QUANTITIES. WRITE FOR PRICES.

WHEELING CORRUGATING COMPANY

WHEELING, WEST VIRGINIA





Roy Owen lets shoppers know that he guarantees to meet any price competition and any terms. A sign prominent in his shop at Hillcrest CC, Boise, Ida., keeps possible customers from straying to buy.

be sore. Four months' use of the clubs ought to be worth some premium to the first buyer, but private club members often are unreasonable.

Golfers Expect Top Service

However the private club pro merchandising situation is by no means the sole factor governing pro policy. Players at public or privately-owned fee courses now are expecting pro sales service up to private club standard and prices that meet the store standard. One of the great achievements of pro businessmen is that they're giving the pay-as-you-play golfers that combination.

Pros, manufacturers and city recreation department officials could well study the operations of Paul Scott at Griffith Park, Los Angeles, as an example of pro department business conducted as a public service. There are increasing examples of public and semi-public courses where the pros are given a profit incentive for drawing customers to the courses and serving them in a way that means considerably more net to the municipality, or the course private owner, than to the pro himself.

The fee course owners, having learned the hard way that they get in pro service just what they pay for, have been quicker to open up earning opportunities for pros than most public course controlling bodies. In the latter cases there is an element of jealousy, a tradition of salaries frozen at levels lower than in private enterprise, and political fixing that often retards the

development of pro department service to the degree the public could have.

Across the country from Scott is Spencer Murphy at an exclusive private club where Murphy has to apply different methods to a different type of clientele and in his shop can meet the competition of the top level specialty shops. Scott and Murphy illustrate the Number One point is pro merchandising—Know your own market, intimately and accurately and apply to it ALL the merchandising fundamentals in ways that fit. What may go at one club won't work at another club a half a mile down the road. But the same basic policies with variations in application, work out successfully.

Outsmarting Competition

The pros are closer to their customers than the stores are. If a pro allows himself to be outsmarted by the stores his job is to discover how and why he was outsmarted and to correct that deficiency. Complaining will get him nowhere.

The pros around Portland, Ore., have been working successfullly in a market development campaign that stores can't copy. To each monthly pro-amateur event the Portland district pros bring reconditioned used sets of clubs they've taken as trade-ins. The sets of woods and irons have the pro owners' identification by numbers on tags. Prices are given on tags. Each pro is limited to bringing three sets of clubs to each event.



SOLD ONLY IN PRO SHOPS

Now—for the first time—you can offer golf balls especially designed for each player's type of swing.

For the power hitter—recommend the Sweet Shot. Internal compression has been stepped up to a new high with an exclusive super-charged liquid center. It's delicately balanced for rifle-like accuracy, yet it will come through many rounds of tough play still in top condition.

For the smooth-stroking swinger—suggest the Wonderball. Built with a new, thin-walled hydrostatic center, it contains more than 10 times the usual amount of power-transmitting liquid. It is the most sensitive ball made in instant response to stroking and lightninglike getaway. Ease of control, permitting greater accuracy in approach shots and putting, is especially noticeable.

Both golf balls have long-lasting, vulcanized cured covers—and are wound with the new, exclusive F-239 vita-life thread which retains its bounce almost indefinitely.

Try them yourself—you'll be convinced. National advertising in leading golf centers coast to coast is telling the story of their great performance. Please your customers—increase your profits by featuring the Sweet Shot and Wonderball—both made exclusively for Pro selling.

THE WORTHINGTON BALL COMPANY

46th Year, Specializing in Golf Ball Manufacture Elyria, Ohio, U. S. A.

WORTHINGTON

WORLD'S LARGEST EXCLUSIVE GOLF BALL MAKER

The reconditioned clubs sold at reduced prices go not only to amateurs contesting in the prom-am events but draw shoppers who don't happen to be playing. If the clubs are sold the pro owner gets the money. If not, he takes them home. The bargain clubs are well displayed.

Portland pros have found that the cooperative enterprise has helped new club sales by providing a market for trade-ins and has supplied people in lower income brackets with unbeatable bargains in clubs. The over-all result has been to show golfers in the district that good clubs at all prices can be obtained from pros.

The used club deal is getting to be the same sort of a problem to many pros as the used car problem is to automobile dealers. There was a good suggestion on the back of admission tickets to the National Open at Merion. It read: "Be a pal to a beginner. Your discarded equipment will help start a worthy boy or girl in "The Game of a Lifetime"." But too seldom is used equipment donated to kids. some instances pros have exhibited in their shops cut-down clubs for smaller kids they've made from discarded clubs and have taken off the trade-in market some clubs at an allowance which is represented by the time used in cutting down the clubs. But the scarcity of assistants qualified to do even this sort of clubmaking has kept that good showmanship and market development sharply restricted.

Tell Your Story

Although the trade-in arrangement and the time-payment deal can help merchandising at some clubs when applied with good judgment by the pro, the matter of acquainting the members or the non-member golfing public with the pro shop's capacity for meeting any price requirement with pro-approved playing equipment can't be left on an individual contact basis. Everybody who might come into the shop should be informed that the pro is in a position to be top man in any competitive price situation.

Not enough of this has been done in pro shop merchandising.

Roy Owen, pro at Hillcrest CC, Boise, Ida., has a pro shop sign that gets all prospective buyers of golf equipment to "Stop, Look and Listen" and generally has them buying from Roy, according to Bob King, MacGregor Golf's Pacific Northwest representative.

The Owen sign, attractively lettered and prominently displayed in his shop, reads:

"I will guarantee that I can supply you with any type of golf club, bag, ball or other golf merchandise at a price as low or lower then you would pay in any store. My merchandise is the best available and is fair-traded. I depend on your business for my livelihood.

"Your satisfaction is completely guaranteed and you can buy on terms as well as cash.

"Let me prove to you that your pro can handle all your golf needs."

Owen is only one of hundreds of representative pro merchants who is solving his competitive problem by telling his story to his prospective buyers, and not hoping for a solution to be dropped into his lap. His typical case explains why, with more golfers and with more store competition, the pro command of the dollar volume of the golf market is getting stronger.

USGA COMPETITIONS FOR 1951

Walker Cup Match: May 11 and 12 at Birkdale Golf Club, Birkdale, Southport, England. Men's amateur teams, Great Britain vs. United States.

(Dates entries close mean last dates for application to reach USGA office, 73 E. 57th St. New York 22, N.Y., except in the case of the Amateur Public Links Championship. For possible exceptions in dates of Sectional Qualifying Rounds, see entry forms.)

Championship	Entries Close	Sectional Qualifying Rounds	Championship Dates	Venue
Open	May 21	June 4	June 14-15-16	Oakland Hills C. C., Birmingham, Mich.
Amat. Public Links	*June 1		Team: July 7 Indiv.: July 9-14	(not determined)
Junior Amateur	July 2	July 17	July 25-28	Univ. of Illinois, Champaign, Ill.
Girls' Junior	July 30		August 13-17	(not determined)
Women's Amateur	July 23	Aug. 7-8	August 20-25	Town and Country C., St. Paul, Minn.
Amateur	August 13	August 28	Sept. 10-15	Saucon Valley C. C., Bethlehem, Pa.

*Entries close with Sectional Qualifying Chairmen. **Exact date in each Section to be fixed by Sectional Chairmen.