USGA JOURNAL AND TURF MANAGEMENT

CHANGING OF THE GUARD

John G. Clock (left), outgoing President of the USGA, greets his successor, John M. Winters, Jr., on the dais at the Association's Annual Meeting. An account of the activities at the meeting begins on page 4.

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USGA JOURNAL AND TURF MANAGEMENT

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USGA COMPETITIONS FOR 1962

Championship or Team Match	Entries Close	Qualifying Rounds	Dates of Event	Location
Open	May 2	Local—May 21 **Sectional—June 5	June 14-15-16	Oakmont Country Club, Oakmont, Pa.
Women's Open	June 13	——	June 28-29-30	Dunes Golf & Beach Club Myrtle Beach, S. C.
Amateur Public Links	*May 31	‡June 17-24	July 9-14	Sheridan Park Golf Course, Tonawanda, N. Y.
Junior Amateur	June 27	July 17	Aug. 1-4	Lochmoor Club, Grosse Pointe Woods, Mich.
(1) Curtis Cup Match	——	——	Aug. 17-18	Broadmoor Golf Club, Colorado Springs, Colo.
Girls' Junior	Aug. 3	——	Aug. 20-24	C. C. of Buffalo, Williamsville, N. Y.
Women's Amateur	Aug. 8	——	Aug. 27-Sept. 1	C. C. of Rochester, Rochester, N. Y.
Amateur	Aug. 15	‡Sept. 4 or 5	Sept. 17-22	Pinehurst Country Club, Pinehurst, N. C.
Senior Amateur	Aug. 29	Sept. 13	Oct. 1-6	Evanston Golf Club, Skokie, Ill.
(2) World Amateur Team	——	——	Oct. 10-13	Fuji Golf Course, Kawana, Japan

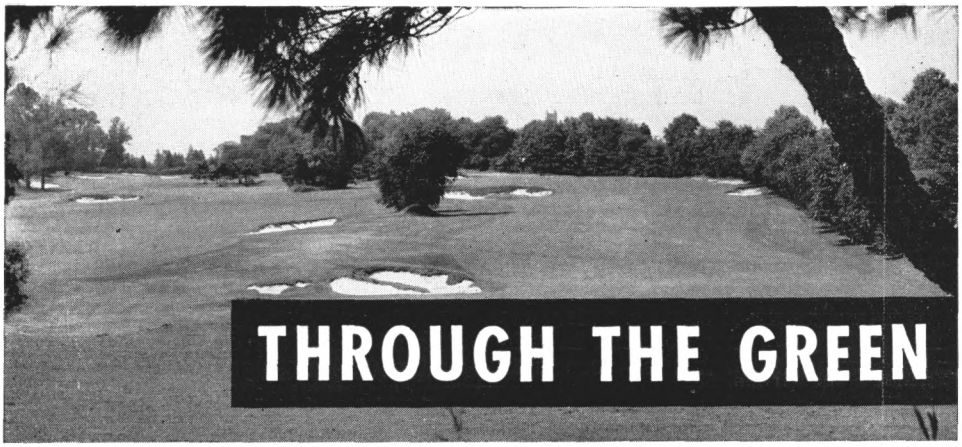
** **Open Championship:** Date of Sectional Qualifying Championships may be changed to Monday, June 4 if local authority in charge deems advisable.

Amateur Public Links Championship: *Entries close with each Sectional Qualifying Chairman.

‡ Exact date in each Section to be fixed by Sectional Chairman.

(1) **Curtis Cup Match:** Women's amateur teams—British Isles vs. United States.

(2) **World Amateur Team Championship:** Men's amateur teams.



THROUGH THE GREEN

Backspin Tests

As a result of tests conducted to determine the effects of clubface roughness on the backspin imparted to the golf ball, the USGA Implements and Ball Committee has decided it would be impractical to ease or to eliminate the present regulations which control the markings on iron clubs.

The Committee, after hearing reports that clubface roughness had little or no effect on backspin, had a series of ultra-high speed motion pictures taken of balls struck, first with a very smooth-faced iron club, then with a very rough-faced one.

Clarence W. Benedict, Chairman of the Committee, reported at the USGA Annual Meeting that "Although it is apparently true that a smooth surface can produce equivalent or even greater backspin than a rough one in individual cases, the **average** backspin is much greater with the rough-faced club."

Balls struck with the smooth-faced iron attained a backspin of 62.5 to 261 RPS (revolutions per second). When struck with the rough-faced iron the backspin attained was from 206 to 250 RPS.

This showed that, although it is possible to get as much backspin with a smooth-faced club as with a rough one, the average is much higher with the rough-faced one and the results much more consistent. In these tests the smooth-faced club gave an average of 166 RPS for all shots and the rough-faced club 224 RPS.

The Need for One Code

The need for a universal Rules of Golf was never more vividly illustrated than during a recent tournament which paired outstanding men and women professionals as partners.

Miss Patty Berg, playing with Sam Snead, incurred a two stroke penalty when she failed to mark her ball on the putting surface with a coin as stipulated by one of the variations to the Rules of Golf currently in use on the PGA tour.

The Ladies PGA adheres to the Rules of Golf in its competitions. Miss Berg's penalty, therefore, came about as a result of her failure to conform to a stipulation she was faced with for the first and only time during 1961.

The point is: if one of the game's most respected figures, who certainly knows the Rules of Golf, can become confused by these variations, what would happen to the weekend player and his understanding of the game if more than one code of rules became common?

Rhode Island, Beware

If all the golf courses in the United States were to be rolled together and dropped on New England they would cover 89% of the State of Rhode Island.

According to the National Golf Foundation, a record number of courses, 409, were opened during 1961, an increase of 48% over the previous high year of 1960. The new courses include 247 of standard

length, 76 additions to existing courses and 86 new par-3 courses.

The latest Foundation statistics tell of 6,623 courses in the United States, 4½ million golfers who play at least 15 rounds annually; $1,556,000,000 invested in land, courses, facilities and furnishings; $138,000,000 spent annually to maintain courses and grounds; and a total of 87,562,000 rounds played during the year.

The resort states of California and Florida are experiencing the most rapid growth in number of courses. Thirty-one standard length courses opened in California during 1961. Florida was next with 22.

Not Specified

It has come to the attention of the USGA that some new golf courses are reported to have been "built according to USGA specifications."

The Association does not promulgate specifications for golf course construction. The Association's Green Section has, in recent years, recommended specifications for ideal composition of putting greens only. However, such specifications are not likely to be of use if the club does not have laboratory analyses of soils used for the greens.

New USGA Agronomist

Holman M. Griffin has joined the staff of the USGA Green Section as a Southwestern Agronomist. He had been a Park Maintenance Supervisor for the Dallas Park Department since 1958.

A native of Dallas, Griffin is a graduate of Texas A & M College where he majored in Agronomy. He served as a Lieutenant in the U. S. Army from 1956 to 1958.

Griffin replaces James R. Kollett, who has resigned, on the Green Section Staff. Charles E. Croley, who has been a Southwestern Agronomist at the Green Section office on the Texas A & M campus, has been transferred to the Northeastern Office at Highland Park, N. J.

Golf Accident Survey

Accidents at golf clubs occur at a rate of 2.8 accidents per club each year, according to a recent survey made by the Institute for Safer Living.

The survey, based on data supplied by 232 clubs, shows that 57.6% of all accidents are caused by persons being hit by balls. Injuries sustained through accidents with golf clubs account for 11.4%, and heat prostration is a cause of 9.5% accidents.

More than half the accidents (52%) are sustained by players. Caddies are involved in 25% of the accidents and workers in the remaining 23%.

Based on its survey, the Institute has produced a safety poster which it offers free of charge to clubs. It is available at any office of the American Mutual Liability Insurance Company.

Scholarship Prizes Banned

As of January 1, 1962, it is no longer permissable for an amateur golfer to accept a scholarship as a prize in a golf competition.

Although this was permissable before January 1, 1962, the Rules of Amateur Status have been changed to conform with a policy of the National Collegiate Athletic Association which provides that scholarships to NCAA member institutions must be awarded by the institution's regular committee or other agency for the awarding of scholarships and that such committees must have the final determination of the student athlete who is to receive an award.

Since a scholarship is the equivalent of money, this prohibition applies to all scholarships, not just to those valued at more than $200.

A Tourist's Stroll

Golf, according to the Russian publication Nedelya, is "similar to a tourist's stroll with a stick and a ball."

Nedelya, an illustrated journal published by Izvestia, the official Russian Government newspaper, explained to its readers recently that in golf "the one who hits 36 holes first is the winner."

The Russian article said golf was originated in Denmark in the 15th century, and that players cover the court twice over 18 grass fields. On each field, reported to be 100 to 500 meters in length, there is one hole. A meter is 39.37 inches.

According to the author, "Both men and women play golf; mostly people who are well off. That is why the play is conducted with comfort. Players can begin early and stretch it out till darkness. The rules provide for breaks for lunch, dinner and time out for smokes."

Participants, the Russian audience was told, do not hurry from one field to another. Behind them are boys who carry 12 different sticks and "when it is necessary to hit a ball a considerable distance, they select a stick that is heavier and thicker."

Lady Pros in Britain

Chalk up another victory for the feminists.

Early in February the Professional Golfers Association of Great Britain announced that women would be admitted to its ranks.

Col. Harry Reed, Secretary of the British PGA, said "Instead of waiting for the inevitable to hit us, we are going forward to meet it."

This means women theoretically could compete on the British tournament circuit, and what appears more likely, can be hired as club professionals.

Women never have had the opportunity to be hired as club instructors in the past although several women players have relinquished their amateur status because of connections with equipment manufacturers.

Mrs. Jessie Anderson, one of Britain's prominent players, indicated she might enter professional tournaments but was skeptical about her chances.

"Candidly, I can't see women competing successfully with men from men's tees," she said. "But from women's tees we might get somewhere."

USGA Staff Changes

Frank Hannigan has been appointed Tournament Relations Manager of the USGA, replacing Robert C. Renner who resigned to become Assistant Sports Editor of the Indianapolis News.

Hannigan had been the USGA Public Information Manager for the past year. Eddie L. Ervin will replace Hannigan. Ervin was formerly Associate Editor of GOLF WORLD magazine.

NEW MEMBERS OF THE USGA

REGULAR

Ariz.	Maryvale Men's Club
Ariz.	Show Low Country Club
Calif.	Buena Vista Golf Club
Calif.	Jurupa Hills Golf Association
Calif.	La Quinta Country Club
Fla.	Bay Hill Club
Fla.	Cape Coral Country Club
Fla.	Rolling Hills Country Club
Ill.	Mt. Carmel Golf Club
Ind.	Morris Park Country Club
Md.	University of Maryland Golf Club
Mass.	Pleasant Valley Country Club
N. J.	Jersey City Police and Fireman's Golf Club
Okla.	Boise City Golf Club
Ore.	Hidden Valley Golf Club
Pa.	Yardley Golf Club
W. Va.	Green Hills Country Club

ASSOCIATE

Fla.	Mid-Florida Golf Course
Fla.	University Park Country Club
Tenn.	Sewanee Golf and Tennis Club

Books Reviewed

Golf in Europe, 1962, edited by H. T. Ostermann (distributed in U. S. by GOLF DIGEST, $3.00). A handbook listing details on courses in 19 European nations.

Knave of Clubs, by Eric Brown (Stanley Paul & Co., London). The autobiography of the outstanding Scotch professional.

The Secret of Holing Putts, by Horton Smith and Dawson Taylor (A. S. Barnes and Co., $4.95). A heavily-illustrated book co-authored by a renowned professional, Smith, and by an amateur player.

Necrology

It is with deep regret that we record the death of:

Bernard Darwin, London, England, for 39 years golf writer for the "London Times" and author of many books on the subject. He was a member of the 1922 British Walker Cup Team.

John D. Hoblitzell, Jr., Clarksburg, W. Va., a member of the USGA Junior Championship Committee since 1952.

Robert A. Stranahan, Toledo, Ohio, a member of the USGA Executive Committee in 1944-45.

Alfred C. Ulmer, Jacksonville, Fla., a member of the USGA Senior Championship Committee from 1955 through 1960. He won the Championship of the United States Seniors' Golf Association in 1950.

WORLD RULES UNIFORMITY RE-ESTABLISHED BY USGA

By
FRANK HANNIGAN
USGA Public
Information Manager

Uniformity in world golf Rules has been re-established by the USGA. In line with its long-standing policy of one code, the USGA has also:

1. Ended its trial Rules of the last two years relating to balls out of bounds or unplayable and the provisional ball;

2. Begun preparations for rules amendments which will be negotiated at its quadrennial meeting in 1963 with the Royal and Ancient Golf Club of St. Andrews, Scotland, when the rules for 1964 will be determined;

3. Decided to minimize future Rules changes, preferably not oftener than every four years.

The action on the Rules was announced at the 68th Annual Meeting of the Association on January 27 in New York City, when John M. Winters, Jr., of Tulsa, Okla., was installed as the USGA President. He succeeds John G. Clock, of Long Beach, Calif., who served in that office during 1960 and 1961.

Horton Smith was named the eighth winner of the Bob Jones Award "in recognition of distinguished sportsmanship in golf" at the meeting. One day earlier, Professor Lawrence S. Dickinson received the second USGA Green Section Award during the annual Green Section Educational Program.

Rules Proposals

Wm. Ward Foshay, Chairman of the Rules of Golf Committee, revealed that the Committee has started drafting proposals for consideration in 1963. These include the Rules for balls out of bounds or unplayable, the provisional ball, the flagstick, repair of ball marks on the putting green, striking another ball on the putting green in stroke play, the penalty for an excessive number of clubs, and other present rules which are considered confusing to many golfers. Mr. Foshay said there is no sentiment to increase the maximum number of clubs permitted beyond the present limit of 14.

In the course of drafting, the USGA plans to confer with national, sectional and state golf association executives, both amateur and professional. A series of three meetings to discuss Rules and other matters of general interest has been scheduled for March (see page 9).

Re-establishment of one world-wide code this year means a return to the USGA's permanent Rules, administered jointly by the USGA and the R&A. This will avoid confusion about Rules in the World Amateur Team Championship for the Eisenhower Trophy in Japan in October.

In the 1962 code the USGA will authorize clubs to adopt a Local Rule to provide relief from paved paths and roads close to playing areas if they unfairly affect play.

The summary on page 5 shows the main differences between the trial Rules and the permanent Rules to be effective March 1:

A New Championship

Other highlights of the Annual Meeting included announcements that:

1. The USGA will establish a Senior Women's Amateur Championship;

2. Prize money for professionals in the 1962 Open Championship has been fixed at $70,000, an increase of $10,000 over the amount scheduled in 1961.

The new Championship, for ladies who have reached their 50th birthday, will be at 54 holes stroke play. It will be inaugurated either in 1962 or 1963. The time and the place for the first tournament have not been determined. With addition of the Senior Women's event, the USGA program now includes nine annual national Championships.

First prize in the Open, scheduled for June 14-16 at the Oakmont Country Club, Oakmont, Pa., will be $15,000, an increase of $1,000.

The field for the Championship will again be determined by two series of qualifying competitions. In the second

Summary of Rules Changes

	1962	1961 Trial
Ball out of bounds (Rule 29-1)	**Stroke and distance**	**Stroke and distance. Exception: Clubs could, by Local Rule, also provide optionally for dropping a ball, under penalty of 1 stroke, within 2 club-lengths of place where ball last crossed boundary line.**
Ball unplayable (Rule 29-2)	**(1) Stroke and distance or (2) Drop behind place where ball lay. Penalty—2 strokes.**	**(1) Stroke and distance or (2) (a) Drop behind or (b) within 2 club-lengths of place where ball lay; if ball lay in bunker, a ball must be dropped in the bunker. Penalty—1 stroke.**
Provisional ball (Rule 30)	**For ball which may be lost, out of bounds, unplayable, or in water hazard or lateral water hazard**	**For ball which may be lost or out of bounds.**

series, at 13 locations, the prize money for each event will total $600, as in 1961. The $7,800 to be awarded at the 13 sectional Qualifying Championships added to the purse at the Championship proper increases the total prize money for all phases of the Open Championship to $77,800.

Award Winners

Horton Smith, who could not be present to receive the Bob Jones Award, was honored for his rare accomplishments in professional golf as player, teacher and administrator.

A professional since 1926, Smith became renowned as "The Joplin Ghost" when his successes included victories in four consecutive tournaments during the winter of 1929-30.

He won the first Masters tournament in 1934, repeated that triumph two years later, and is now the only man who has played in every Masters since its inception. A seven-time selectee for the U. S. Ryder Cup Team, Smith is regarded as one of the great putters of all time.

After service during World War II in the Army Air Force, Smith became active in the national affairs of the PGA. He served the PGA as its Secretary during 1950-51 and as President from 1952 through 1954. Over the years he has striven to elevate the status of the club professional. His aid and counsel to the PGA in formulating policy, setting high standards, and helping it grow, have been notable.

Smith, professional at the Detroit Golf Club since 1946, has received many other honors. He was elected to the PGA Hall of Fame in 1958; elected an honorary Life Member of the PGA of Great Britain in 1959; and last year received the Ben Hogan Award, given by the Golf Writers

Lawrence S. Dickinson (right), Professor Emeritus at the University of Massachusetts, receives the USGA Green Section Award from William C. Chapin, Chairman of the Green Section Committee.

Association of America to an individual who has overcome a physical handicap and has been an inspiration to others. Smith has continued to play and to teach despite an illness which necessitated the removal of one lung and two ribs.

Past recipients of the Bob Jones Award have been Francis D. Ouimet, William C. Campbell, the late Mrs. Mildred D. Zaharias, Miss Margaret Curtis, the late Findlay S. Douglas, Charles Evans, Jr., and Joseph B. Carr.

Lawrence S. Dickinson, the Green Section Award recipient, is Professor Emeritus of Agrostology, that branch of systematic botany treating of grasses, at the University of Massachusetts.

A pioneer in the teaching of turf management, Professor Dickinson established the Stockbridge Winter School at the University of Massachusetts in 1927 after visualizing the need for providing trained men to serve as golf course superintendents.

Since its innovation and as a direct result of Professor Dickinson's vision, more than 500 technologists in fine turf management have been graduated from the Stockbridge School.

For many years the Stockbridge School had the distinction of being the only school in the country to offer specialized training in Agrostology. Spurred by the example of the Stockbridge School, many other universities have since recognized the need for such training and have established similar programs.

Under Professor Dickinson's leadership, a two-year course for students majoring in turf management was subsequently initiated. For many years Professor Dickinson was a one-man faculty of both these schools. In later years he was ably assisted by others interested in the training of golf course superintendents.

Some of the marked improvements in golf course maintenance in the past three decades can be traced directly to the efforts of Professor Dickinson. Hundreds of his former students are now superintendents at golf courses throughout the United States.

The first Green Section Award was received last year by Dr. John Monteith, Jr., of Colorado Springs, Colo.

Election of Officers

The USGA's new President, John M. Winters, Jr., was a Vice-President in 1959-60-61, an Executive Committee member since 1955, and Chairman of the Rules of Golf Committee during 1956-60. He is a past President of both the Oklahoma State Golf Association and the Southern Hills Country Club.

Other officers elected are Clarence W. Benedict, White Plains, N. Y., and Wm. Ward Foshay, New York City, Vice-Presidents; Bernard H. Ridder, Jr., St. Paul, Minn., Secretary; and Hord W. Hardin, St. Louis, Mo., Treasurer.

Two new members were elected to the Executive Committee: William C. Campbell, Huntington, W. Va., and Robert F. Dwyer, Portland, Ore.

Campbell, long one of the finest amateur golfers in the country, has been a member of the USGA Amateur Status and Conduct Committee since 1950. He has been Captain of both the Walker Cup and Americas Cup Teams and has been a playing member of these two USGA international teams on seven occasions.

Dwyer has been a member of the USGA Sectional Affairs Committee since 1960. He is a Director of the Western, the Pacific Northwest and the Oregon Golf Associations.

Executive Committee members re-elected are: Fred Brand, Jr., Pittsburgh; William C. Chapin, Rochester, N. Y.; Edward L. Emerson, Boston; Edwin R. Foley, San Francisco; Robert K. Howse, Wichita, Kans.; Harold A. Moore, Chicago; Eugene S. Pulliam, Indianapolis; and Henry H. Russell, Miami, Fla.; Philip H. Strubing of Philadelphia, was again named General Counsel.

Committee Reports

Highlights extracted from Committee Reports included the following:

CHAMPIONSHIPS: The Association's eight National Championships attracted a record 9,480 entrants, an increase of 3.9% over the previous year's high mark.

AMATEUR STATUS AND CONDUCT: Acceptance of scholarships or grants-in-aid won as prizes in golf competitions before the 18th birthday is now prohibited.

IMPLEMENTS AND BALL: Ten brands of ball were barred during the spring for failure to conform with the Rules. When re-tested later in the year, all 10 brands were found to conform.

MEMBERSHIP: There was an increase for the 16th successive year, the net gain of 98 raising the total to 2,548 Member Clubs and Courses.

GREEN SECTION: The Visiting Service has an enrollment of 823 courses. The USGA staff of eight agronomists made 1,268 visits to courses.

FINANCES: Healthy. Although the budget anticipated a deficit, there was a net income of $29,164.

The Chairmen of the Committees for 1962 are listed on the back cover of this issue.

Green Section Program

The entire Green Secton Educational Program was devoted to "A Business Approach to Golf Course Maintenance." Experts in various phases of the topic presented their views in nine different discussions. Excerpts from these will be printed in later issues of the JOURNAL.

William C. Campbell

Robert F. Dwyer

Horton Smith

TEN FILMS FOR GOLF MEETINGS

Orders should be sent to USGA office

Those ten lively audio-visual aids—the films in the "Golf House" Film Library—can now be ordered directly through the USGA at 40 East 38th Street, New York City 16. An order form for that purpose is provided on page 9.

The films, which have been especially well-received at pre-season golf meetings, fit generally into two categories: three dramatizations of the Rules of Golf and seven others that entertain by their presentation of the historical and international aspects of the game.

All ten are 16 mm. sound films. Eight are entirely in color. "Walker Cup Highlights" is split into color and black and white segments while "Great Moments in Golf" is entirely black and white.

Orders for films should be planned to allow approximately four weeks for filing rental orders. The sale prices of prints will be supplied on request.

USGA "GOLF HOUSE" FILM LIBRARY

Rules of Golf Dramatizations

"THE RULES OF GOLF—ETIQUETTE"

A family four-ball match stresses the importance of right relations to other players and to the course. Ben Hogan appears in several scenes. Robert T. Jones, Jr., makes the introductory statement. A "must" for every golfer.

17½ minutes

"PLAY THEM AS THEY LIE"

The Rules of Golf for fairway and rough. Johnny Farrell, the 1928 U. S. Open Champion, acts as intermediary between Wilbur Mulligan, a beginner of unimpeachable integrity, and Joshua P. Slye, a past master in the art of breaking the Rules. Filmed at Baltusrol Golf Club, Springfield, N. J.

16½ minutes

"ON THE GREEN"

The Rules governing situations on the putting green. Photographed at the Mid-Ocean Club, Bermuda.

17 minutes

Entertainment, History, Travel

"GREAT MOMENTS IN GOLF"

Eight Champions are seen with the many interesting exhibits in "Golf House," home of the USGA Golf Museum and Library, and in flashbacks of their playing days. Robert T. Jones, Jr., during his "Grand Slam" . . . Ben Hogan . . . Francis Ouimet . . . Gene Sarazen . . . Charles Evans, Jr. . . . Findlay S. Douglas . . . Mrs. Glenna Collett Vare . . . Miss Margaret Curtis. Black and white.

28 minutes

"WALKER CUP HIGHLIGHTS"

Historic events in golf's oldest team competition between Great Britain and the United States. Robert T. Jones, Jr., Francis Ouimet and other great players are shown. First half, black and white; second half, beautiful color sequences of the 1959 Match at Muirfield, Scotland.

16 minutes

"FIRST WORLD AMATEUR TEAM CHAMPIONSHIP FOR EISENHOWER TROPHY"

Twenty-nine countries compete in golf's newest major event at St. Andrews, Scotland. Climaxed by play-off in which Australia defeats the United States to become the first winner of the Eisenhower Trophy.

14 minutes

"SECOND WORLD AMATEUR TEAM CHAMPIONSHIP FOR EISENHOWER TROPHY"

International friendships are furthered as 32 countries play at the Merion Golf Club near Philadelphia. The United States is the winner, paced by remarkable play by Jack Nicklaus. President Eisenhower is shown receiving the American and the Australian teams at the White House.

17 minutes

"GOLF'S LONGEST HOUR"

Cary Middlecoff sets a target at which Ben Hogan, Julius Boros and Ted Kroll aim in vain, as Dr. Middlecoff wins the 1956 U. S. Open Championship at Oak Hill Country Club, Rochester, N. Y.

17½ minutes

"ST. ANDREWS, CRADLE OF GOLF"

Beautiful scenes of the historic town of St. Andrews in Scotland and its Old Course, with unusual interior scenes of the Royal and Ancient Golf Club. An award winner for 1959.

"FAMOUS GOLF COURSES: SCOTLAND"

Picturesque and famous holes on the great courses at Troon, Prestwick, Carnoustie, St. Andrews, North Berwick and Muirfield. The distinctive aspects of Scottish linksland are seen at their finest.

18 minutes

USGA MEETINGS FOR GOLF OFFICIALS

Two series of golf conferences will be sponsored by the USGA at Washington, Chicago and San Francisco in the week of March 12.

At each place, the first of two days wil be devoted to the subject "A Business Approach to Golf Course Maintenance." The USGA Green Section will conduct the program.

Golf administration will be considered the second day by representatives of golf associations, both men's and women's, and by the 34 sections of the Professional Golfers' Association of America to be represented by three officials each.

These meetings will be the first of their type to be arranged by the USGA. Topics will include the Rules of Golf, tournament procedures, handicapping and course rating, amateur status, junior programs and senior programs. The conferences will be informal. They will provide opportunity for associations to exchange views and information.

Members of USGA Committees will participate, along with Joseph C. Dey, Jr., Executive Director, and P. J. Boatwright, Jr., Assistant Director. Each meeting is scheduled from 9:30 A. M. to 5:30 P. M.

The schedule is as follows:

At Washington, D. C., March 12 and 13, Marriott Motor Hotel; at Chicago, March 14 and 15, Sheraton Chicago Hotel; at San Francisco, March 16 and 17, Sheraton Palace Hotel.

Each Green Section program will be in two sessions: 2 to 6 P. M. and 8 to 10 P. M. The first session in each case is designed primarily for golf course superintendents, the second for green committee chairmen.

Members of the USGA Green Section Committee will participate, along with scientists on the Staff of the USGA Green Section.

WHY AMATEURISM IS DENIED PHYS. ED. TEACHER OF GOLF

A basic principle concerning compensation

Johnny B. Crasher is a fictitious but talented amateur golfer on the faculty of a small mid-western college. He is an assistant professor in the department of physical education.

Crasher's duties, until last fall, consisted of 15 hours of weekly course instruction and coaching both the swimming and the tennis teams.

The departmental chairman, Crasher's boss, decided to enlarge his curriculum by adding courses of instruction in specific sports, golf included. Well aware of Crasher's feats in sectional and club tournaments, the chairman offered Crasher the job of teaching the indoor golf class.

Crasher loved golf and was eager to be rid of a gym class stuffed with languid students in attendance only because their presence was required, so he accepted without reservations.

The college president patted the departmental chairman on the back for his ingenuity; the students were delighted with the opportunity to receive golf instruction without additional tuition charges; and Crasher found that the extra time spent with a club in his hands improved his game no end.

Is Crasher an Amateur?

But what about Crasher's relationship with the amateur golfers he competes against? It's apparent that at least part of his compensation from the college is now derived from the class he instructs in golf. Is he entitled to retain amateur status?

The USGA Executive Committee firmly says "no" and has always said "no" when asked to rule on situations closely paralleling the fictitious Mr. Crasher's.

The Committee's stand, often misunderstood by some who claim the USGA is needlessly finical in such cases, deserves a full hearing:

Fundamentally, to receive compensation for giving golf instruction is a primary violation of the amateur code, and always has been.

Teachers are Professionals

Physical education teachers at educational institutions are trained professionals at teaching sports. When they teach golf, they are not amateurs in golf. If a National Amateur Champion were to become a physical education instructor and his duties included teaching golf, it would not be fair or logical for him to compete as an amateur against amateurs.

This is a common concept in sports. A paid sports coach in, say, basketball is not allowed to play amateur basketball under A.A.U. rules.

To grant amateur status to physical educators who teach golf for compensation would be unfair not only to other amateurs but also to bona fide professional golfers. The professionals' legitimate field would thus be encroached upon. Further, would it be fair for a college golf instructor to be allowed to play amateur golf and for a club golf instructor to be barred? Both are golf instructors for compensation.

Applies to Students

The Rule applies not only to bona fide faculty members but also to student assistants who are compensated for instructing in golf. Some years ago almost the entire golf team of a college was disqualified from amateurism because, among other things, the team members were paid to teach golf classes to other students. If that were permissible, one could imagine stern competition among some colleges for the services of leading juniors as instructors, as well as playing representatives. Educational institutions would be likely to seek out skilled amateur golfers as instructors. This could produce the anomaly of a college golf teacher playing for the National Amateur Championship.

Occasionally it has been suggested to

the USGA that part-time teaching of golf by physical educators ought to be permitted under the Rules. This would still do violence to the basic principle that amateurs may not give golf instruction for compensation. There are many ways of teaching golf—the Rule cites instruction orally, in writing, by pictures or by other demonstrations. Obviously, the Rule could not consistently condone class instruction at a college and prohibit part-time instruction through writing for newspapers and magazines or appearance in television shows.

Aside from this fundamental policy, how could a fair line be drawn as to how much or how little golf teaching might be permissible? A survey of women sports teachers in colleges a few years ago showed wide differences in percentage of time devoted to teaching golf, ranging from 5% to 100%.

A Helpful Rule

Some physical educators have said that the Rule in question is detrimental to development of golf in schools and colleges. Actually, the opposite seems true. If an instructor is qualified to give instruction in golf, he is entitled to be paid for doing so; if he is not qualified to give instruction, it would be better for the game that he not do so.

The USGA Executive Committee has no present intention of modifying the Rule.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, JULY 2, 1946 AND JUNE 11, 1960 (74 STAT. 208) SHOWING THE OWNERSHIP, MANAGEMENT AND CIRCULATION OF USGA JOURNAL AND TURF MANAGEMENT published seven times annually at New York, N. Y., for Oct. 1, 1961.

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3. The known bondholders, mortgagees, and other security holders, owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

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5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: 3,706.

Frank Hannigan
Managing Editor

Sworn to and subscribed before me this 29th day of September, 1961.

Gotfred Pearson

(My commission expires March 30, 1962)

TURNING BACK THE CLOCK ON USGA WORK FOR GOLF

By
JOSEPH C. DEY, JR.
Executive Director
United States Golf Association

Based on remarks prepared for 1961 Educational Program of Professional Golfers' Association of America

There's always danger in looking backward. You may become so enchanted with where you've come from that you forget where you're headed for. All of us sometimes sigh for "the good old days," and that can keep us from taking deep breaths in the fresh air of the present.

But a view of history can be profitable. There is real value in stock-taking, in recalling what was good and useful, and what was not, with a view to handling the future properly.

Let's first take a look at the USGA's past through some rather distorted glasses—by imagining what might be the case today if the USGA had been radically different or if there had never been a USGA. Let's do this by looking in on one hole of an imaginary round in the National Open Championship involving Jack and Gene (any resemblance to Jack Nicklaus or Gene Littler is purely coincidental).

Jack arrives at the first tee in his midget helicopter. He pulls out a gauge that tells him he should allow for a 5-degree wind drift from the right. He tees his ball—it is 1.5 inches in diameter—and he drives 396 yards down the fairway (the hole was recently lengthened from 550 to 635 yards because the boys had been reaching the green with wedge seconds).

"Nice shot," says Gene. "By the way, I'm playing 18 clubs today."

"Ive got 20," Jack answers. "Our company is just bringing out a new 9¾ iron, and I want to use it in the Open so it'll be known when I defend my National Amateur Championship next month. I'll get a 10% royalty on each one. The other amateurs will go for it strong, especially if I win the National Amateur again."

Gene drives 15 yards short of Jack. "Those new built-in- gyroscopes in this ball surely keep it on line, don't they?" he remarks. He plays a medium iron whose shaft is attached to the head right in the middle, behind the sweet spot—"Gives more power and reduces torque," he explains, as the ball sits down four feet from the cup.

Jack, in the fairway, picks up his ball and places it on a little tuft of grass. "I hate cuppy lies," he says. He plays the new club, and the ball does a little jig before snuggling down two feet from the hole.

As Jack gets out of his midget helicopter at the parking space alongside the green, he finds Gene moaning: "I'd understood that the cups were going to be 10 inches wide. They look to be only about 7 inches to me."

Jack explains: "They are 10 inches on the back nine. Most clubs around here have 9 or 10-inch cups on the back nine and 7-inchers on the first nine, but there's no real rule about it."

And so on . . .

If that seems a fantastic account of what golf might have been today, let's look at some of the influences which have made the game what it actually is. The entire history of the USGA is directly related to those influences.

The principal purpose of the USGA is simply this: to promote and to conserve "the best interests and the true spirit of the game of golf"—so says the USGA Constitution.

You can best tell history by recounting actions. The USGA's actions occur in a wide variety of fields. Let's confine this sketchy discussion to three broad fields:

First, Competitions
Second, General Services
Third, Regulations

COMPETITIONS

A mix-up involving championships was the direct reason for the creation of the USGA. In 1894, before there was a USGA, two different clubs in the East each held what purported to be the Amateur Championship of the United States. They were the Newport Golf Club in Rhode Island and the St. Andrew's Golf Club of Yonkers, N. Y. W. G. Lawrence won at Newport in September, with a score of 188 for 36 holes stroke play—8 over even 5s. In October, L. B. Stoddard won at St. Andrews, at match play. Here there were **two** so-called National Amateur Champions.

To avoid such an embarrassing condition thereafter, Henry O. Tallmadge, Secretary of the St. Andrew's Club, conceived the idea of a national association of clubs to establish uniform rules and to conduct future championships. He invited representatives of five clubs to a dinner in New York on December 22, 1894. (Some 20 clubs were then in existence.) Those five clubs formed the Amateur Golf Association of the United States. The name was soon changed, first to American Golf Association and finally to United States Golf Association. The five clubs thus banded together were:

Newport Golf Club, Newport, R. I.
Shinnecock Hills Golf Club,
Southampton, N. Y.
The Country Club, Brookline, Mass.
St. Andrew's Golf Club,
Yonkers-on-Hudson, N. Y.
Chicago Golf Club, Chicago, Ill.

Some early Committee meetings were held just two blocks from the present location of the USGA's "Golf House," in the New York home of the USGA's first President, Theodore A. Havemeyer.

The first USGA Championships were conducted at Newport in 1895. Originally scheduled for September, they were postponed to the first week of October on account of the America's Cup yacht races.

Thirty-two players started in the Amateur Championship, entirely at match play, and the winner was Charles B. Macdonald, a Chicago Scotsman. One player, Richard Peters, carried a billiard cue and putted with it, in all seriousness. He went out in the first round before the more righteous play of a clergyman, the Rev. William Rainsford.

From a newspaper point of view, the social aspects of the Championship were perhaps more important than the golf, for the New York Herald published these thrilling accounts:

"At three o'clock society began to appear and fully 100 of the spectators were soon tramping over the hills. It was a bright scene; the ladies in their silks and the men in their red golfing coats made a scene of color seldom witnessed in outdoor sports. The game of the morning was C. B. Macdonald, the probable champion, against Laurence Curtis. The latter was not in any way in the game with Macdonald, for he has a low short drive compared to a long well directed drive of his opponent . . ."

A bit later:

"The sun was well down in the western horizon and the moon had risen high in the heavens when it was announced at the pretty little clubhouse that the National Amateur Championship had narrowed down to a contest between New York and Chicago."

The first U. S. Open was played the day after the Amateur ended, also at Newport. It was at 36 holes, and the winner was the 19-year-old assistant pro at Newport, Horace Rawlins, still the youngest Champion in Open history. He scored 91-82—173 for the two rounds in a day—7 under even 5s. Ten professionals and one amateur competed. Horace Rawlins' prizes were a $50 gold medal and $150 cash.

In November of the same year—1895—the USGA held its first women's championship at Meadowbrook on Long Island. The winner, Mrs. Charles Brown, had 69 before lunch and 63 after lunch, and her 18-hole score of 132 made her the Champion.

Thus, with the Amateur, the Open and the Women's Championships, the USGA was fully launched.

Rapid Growth

The game grew rapidly. In 1895 there were some 75 clubs in the United States; in 1900 there were more than 1,000.

An early first was recorded in the 1896 Open when a 16-year-old colored caddie competed.

Much of the history of the Championships can be seen through the records of the great players. One of the early greats

was Willie Anderson, whose record of winning four Open Championships from 1901 through 1905 has never been beaten, though twice tied. Johnny McDermott, who could pitch a mashie shot onto a handkerchief, was the first American homebred to win the Open, in 1911. Walter J. Travis and Jerome D. Travers had become leading amateurs.

Then, in 1913, came the bombshell that literally put golf on page 1 in America. A 20-year-old amateur, a former caddie, Francis Ouimet, defeated the great British professionals, Harry Vardon and Ted Ray, in a play-off for the Open Championship, and thus became the first amateur to win the Open. This did worlds toward popularizing the game.

Amateurs won two of the next three Opens: Charles Evans in 1916 won both the Open and the Amateur.

In 1917-18, because the nation was at war, the USGA did not conduct championships. When they were resumed in 1919 Walter Hagen ended the streak of the amateurs. Three years later Gene Sarazen, 20 years old, burst upon the scene and won the Open.

The Bob Jones Era

The year of Sarazen's first victory, 1922, was notable for several golfing events. The Walker Cup Match came into being, between British and American amateur teams. The USGA started the National Amateur Public Links Championship. In 1922 for the first time, admission fees were charged to spectators at the Open. This resulted partly from the need for controlling curiosity seekers at the Amateur the previous year.

The next year, 1923, brought Bob Jones his first national title, the Open. When he retired at age 28 at the end of 1930, he had won 13 national Championships in Great Britain and the United States, crowned by his Grand Slam of the British and the American Opens and Amateurs—all four of them—in the same year. Seven of Jones' 13 Championships were Opens—three in Britain and four here. His skill is pointed up most sharply by the fact that in eight out of nine straight United States Opens he was first or second—he won four and was runner-up in four. And he retired at age 28.

By the time of the 1924 Open there had been such growth in interest that the elements of sectional qualifying were introduced. First there were just two tryouts—one in Worcester, Mass., and one in Oak Park, Ill. In 1925 there were three —East, Mid-West and Pacific Coast. The next year 17 sectional qualifying rounds were held, and the system was firmly established. Entries for the Open that year zoomed to a record of 694.

Women's golf of that period had its greatest champion, Glenna Collett Vare, who won the National six times. The Curtis Cup Match for British and American ladies was started in 1932.

After World War II the USGA doubled its competitive program by adding a boys' Junior Amateur Championship, a Girls' Junior, a Women's Open and a Senior Amateur (besides, a Women's Senior Amateur will soon be started). The international match program also was doubled—besides the Walker Cup and the Curtis Cup we now have the Americas Cup, involving amateurs of Canada, Mexico and the United States, and the Eisenhower Trophy for the World Amateur Team Championship. The USGA was instrumental in starting the World Championship three years ago. Now 43 countries belong to the World Amateur Golf Council, which sponsors the Championship.

In the post-war Opens, the central figure has been Ben Hogan. He was to this era what Francis Ouimet, Walter Hagen, Gene Sarazen and Bob Jones were to their day. Ben Hogan tied the record of Jones and Willie Anderson by winning four United States Opens. He was twice runner-up. His victories were triumphs not only of golf but of the spirit, after his nearly fatal motor accident before he won his second Open. In the same period Sam Snead won everything but the Open.

It is arresting to compare the scope of championship golf today with the beginnings in 1895. From 11 entries in the first Open, last year there were 2,449. From $150 prize money for the winner, last year it was $14,000; and there was a prize money total of $60,500 in last year's Championship proper plus $7,800 in Sectional Qualifying events—a grand total of $68,300 in prize money for the Open. (In 1962 the total will be $77,800.) From a handful of spectators, last year at Oakland Hills there were by actual

count 20,439 on final last day. From 5 member clubs the USGA now has 2,548.

This year for the eight USGA Championships there was a grand total of 230 sectional qualifying competitions and entries of 9,480—all-time records.

GENERAL SERVICES

A second main category of USGA work is General Services. For so-called glamour and popular appeal, they stand at the opposite pole from the competitions. For their usefulness to golf, their value cannot be calculated.

In all the history of the USGA, one of the most constructive steps was establishment of the USGA Green Section in 1920. At that time there was no impartial scientific agency to which clubs could turn for information and advice about golf course maintenance. The clubs were at the mercy of ignorance and quackery. The USGA enlisted the cooperation of the United States Department of Agriculture and created the Green Section.

Today, there are five USGA Green Section offices, in California, Texas, Illinois, Georgia and New Jersey. Eight USGA agronomists devote themselves to assisting USGA Member Clubs, principally through personal advisory visits to golf courses. In addition, the Green Section sponsors research, which is helped considerably by funds from National Golf Day tournaments conducted by the PGA.

In the 41 years of its existence, the Green Section has invested some $1,600,000 in improving the maintenance of golf courses.

An important part of the USGA's functions is provision of information on almost all phases of golf. To supplement correspondence, press releases and the like, the USGA JOURNAL was started in 1948. It contains much official news and background of the USGA including decisions on the Rules of Golf and handicapping and a section on Turf Management.

Ten motion pictures, of both educational and entertainment nature, have been produced by the USGA in the last seven years.

In the early 30s the late George Blossom, of Chicago, thought the Association should preserve visible evidences of golf development, so he proposed a Golf Museum and Library. It was instituted in 1936 and outgrew its quarters rather rapidly. This resulted in the acquisition in 1950 of a modest five-story dwelling in midtown New York, now "Golf House." The Library is constantly used for references by writers and others in public information work, as well as by plain golf addicts, such as a frequent visitor who spends many lunch hours poring over books on how to putt.

"Golf House" has become a symbol of American golf to many foreign visitors. We have a rather surprising range of international correspondence. In one recent week we dealt with such matters as motion pictures for South Africa, turfgrass for Mexico, letters of introduction for an American in Italy, a Rules decision for Japan, championship information for England, and arrangements for a young European to play golf in New York.

The USGA has been involved in such widely diverse enterprises as conducting an educational campaign against organized gambling in golf and seeking a reduction in the Federal tax on club dues.

With 2,548 member clubs, the scope of the Association's General Services is rather broad.

REGULATIONS

The USGA's third principal work for golf is in regulations—making and interpreting rules for amateur status, for implements and the ball, for handicapping, and for the play of the game. This is perhaps the most distinctive work which the golf clubs of the country perform through their national Association.

Amateur Status

From the beginning, amateur status has been a deep concern of the USGA. If you think the present code is strict, read the rule that applied in the first Championship in 1895:

"An Amateur Golfer shall be a Golfer who has never made for sale golf clubs, balls, or any other article connected with the game, who has never carried clubs for hire after attaining the age of 15 years, and who has not carried clubs for hire at any time within six years of the date on which the competition begins, who has never received any consideration for playing in a match, or for giving lessons in the game, and who, for a period of five years prior to the first of

September, 1890, has never received a money prize in any open competition."

Amateur Status Code

Down through the years the details have changed, but fundamentally the code has always drawn a sharp line between the amateur and the non-amateur or the professional.

It may seem a paradox but, also from the very beginning, the amateur and the professional have competed together in open tournaments without so-called contamination of each other's status—a condition almost non-existent elsewhere in sports. But this open, wholesome relation between amateur and professional is actually part of the reason why amateurism in golf has been generally healthy and not sickened and vitiated by shamateurism.

Of course, golf is not lily-white. But a sincere effort is made to carry out the amateur ideal.

There were problems of amateurism even in the early days. In 1901 Walter Travis was accused by a magazine of violating the rules by accepting free golf and board at Southern resort hotels in exchange for the advertising value of his presence. He was cleared. Later, golf course architects as a class were declared non-amateurs, although this was soon seen to be a mistake and was changed. Over the years several Amateur Champions—popular people—have been deprived of amateur status. Just last fall the USGA looked into the status of a recent National Amateur Champion; he was cleared. Historically, the Association has not hesitated to act in this sphere when there was reason to do so.

One result of such a policy is reflected in a telegram we received from a lady who said:

"Our women's golf association has just become aware of your disapproval of pari-mutuel betting. Our low handicap golfers are awaiting your approval of our 25-cent bets which we hold once a month during the summer. Please wire your answer."

Although this is an extreme case, it reflects something basic. In these days of commercialized sport, the amateurism of golf is conspicuous. But it has always been so. Why?

One reason is that golf is distinctively different because it is a lifetime game—you can make a match with your grandmother, through handicapping. It is not a game just for strong young people, as is true of many other popular sports. Therefore, golf takes a long-range view of amateurism. In the long run this is best for the individual, for it helps sharpen his sense of values and obliges him to make a pretty clear-cut decision.

At the heart of the amateur code is the rule prohibiting expenses generally. Its observance starts with the USGA Executive Committee members—they pay their own expenses to meetings and competitions, and do not receive any remuneration for their work.

If you doubt whether the expense rule in amateur golf is observed, consider this question: Of the 200 players in the National Amateur Championship at Pebble Beach last September, how many do you suppose played in the Championship the year before? You're probably wrong, whatever you say. Of the 200 at Pebble Beach, only 53 were at St. Louis in 1960. Of those same 53, only 23 were at Colorado Springs in 1959. In other words, in this whole big country, only 23 players have competed in all of the last three National Amateur Championships. This seems a healthy state of affairs.

It is a state of affairs in which all golfers are vitally concerned. What kind of a game do you want? Suppose the USGA long ago had given in to a loose policy regarding amateurism: What kind of a game would we have today? How would it affect you?

This is an area in which the USGA has been very consistent throughout its history. The professional has always helped the USGA to keep golf thus—a clean and honorable game, clean and honorable for both amateur and professional.

Implements and the Ball

If you would have a quick lesson in the history of the golf clubs and the golf ball, come to "Golf House." Exhibits there trace the developments from the days of the feather ball.

You'll see how the club evolved from a long, tapering head attached to a hickory shaft, laboriously hand-crafted, to the present machine-tooled precision instruments. You'll see an early steel

shaft—it was perforated, and whistled when swung. There is a model of the Schenectady putter, the almost center-shafted club with which Walter Travis won the British Amateur in 1904 and whose revolutionary concept has affected putters to the present day. You'll see Bob Jones' famous putter, "Calamity Jane."

There is a sort of chamber of illegal horrors:—a club with a set of mirrors for lining up putts—several clubs with spirit levels in the head to show the tilt of the green—all sorts of directional gadgets attached to clubheads—screw-type heads for adjustability during play—a putter with a shaft attached at the toe—and a Rube Goldberg sort of contraption with an intricate angle-and-distance device, plus a directional pointer with a degree dial, and an adjustable clubhead.

Many golfers will remember the problems in the late 40s concerning markings on iron clubs.

Can you imagine what the game would be without controls on such things? It is all very noble for people to want to make golf easier, but without controls a **different game** might well arise from the ashes of golf.

The golf ball has long been a subject of USGA regulation. Many years ago, after the gutta percha ball had vanished and the rubber-cored ball was being constantly improved, it was foreseen that every course in the land could be put out of date if the distance qualities of the ball were not limited. This led to controls on size and weight.

USGA experimentation produced a "larger and lighter" or "balloon" ball in 1931—not less than 1.68 inches diameter and not more than 1.55 ounces weight. The next year the permissible weight was increased back to 1.62 ounces, but the minimum diameter was kept 1.68 inches. This is still the standard ball in the United States.

In 1942 a third specification—velocity of the ball immediately after the club's impact—was added to those of size and weight.

The Association is still deeply concerned about the ball. Of course, we all like to get as much distance as we can; and it is apparent that there is more to distance than the ball's qualities—for example, club shafts are an important element. But the ball is an immediately controllable item, and so the USGA has three types of ball test machines. One was developed in recent years and measures a ball's coefficient of restitution, or its innate resilence. The USGA is presently working on the possibility of a new rule based on this factor.

Last season samples of 10 brands of ball did not conform with USGA specifications, for one reason or another. Fortunately, the manufacturers have all since cooperated and the balls now conform, according to the last tests.

Our British friends are now extensively testing the American size ball, and it is possible that they may abandon the small ball of 1.62 inches minimum diameter and permit only the American size of 1.68 inches minimum diameter.

Handicapping

Handicapping has been a major work of the USGA in the field of regulations. Proper handicapping is at the heart of enjoyment of the game for the rank and file of players.

In the first decade of this century a member of the USGA Executive Committee, Leighton Calkins, developed a handicap system that was the standard for many years.

Later, the USGA borrowed the idea of course rating from the Massachusetts Golf Association—this is a method of rating a hole in decimals, rather than in a round number, as used for par, and it gives a more refined base for computing handicaps.

Now, with course rating and use of the best 10 of the last 25 scores, there exists a national handicap system that produces equitable results no matter where scores are made or how far afield the golfer roams.

Rules of Golf

Finally, as to the Rules of Golf:

In the first Year Book of the USGA, in 1895, there is the following items under the heading "Etiquette of Golf":

"Players who have holed out should not try their putts over again when other players are following them."

"A player should not putt at the hole when the flag is in it."

With the gutta percha ball then in use in the 90s, there was a problem we don't have today, as evidenced by this old Rule:

"If a ball split into separate pieces, another ball may be put down where the largest portion lies, and if two pieces are apparently of equal size, it may be put where either piece lies, at the option of the player."

Among the special rules for medal play was this little gem:

"The penalty for a breach of any Rule shall be disqualification."

Down the years, the course of Rules-making has not been a path of roses. Wars have broken out over such matters as the stymie; in fact, in the early 1920s, feelings about the stymie ran so high that they almost led to formation of a second national association. Even now, brother may fight brother over the momentous question of the penalty for a ball out of bounds. Some golfers take their Rules seriously.

There was a case a year or so ago of two ladies who were so engrossed in conversation that they neglected to play two holes of the course, then wondered why their scores were so low. The question of what to do next almost became a Federal court case.

There was another lady who swung at a ball, whiffed it, discovered it was a wrong ball, and was astounded to learn that she was penalized two strokes—and the ball had not progressed an inch.

The USGA has the Rules under constant daily study. Hundreds of questions are received every year, and a surprising number are new. Some of them lead to changes in the Rules.

Method of Changing Rules

How are changes made?

First, a flaw or a gap in the Rules may be revealed through a new question for a decision, or through a suggestion made by an individual golfer or a USGA Member Club or one of the several hundred golf associations in the United States. The USGA Rules of Golf Committee studies each new matter, first by correspondence and then at meetings. This results in a recommendation to the USGA Executive Committee.

The next step is to transmit the Executive Committee's decision to our British friends of the Royal and Ancient Golf Club of St. Andrews for consideration at the USGA's next joint conference with them. The British likewise send us their suggestions for changes. It has become customary to have a joint conference every four years since the present code was adopted in 1951. The conference then produces final recommendations. They are referred back for final action to the USGA Executive Committee, on the one hand, and the Royal and Ancient Golf Club membership, on the other hand.

Before the last joint meeting with the British in 1959, the USGA Negotiating Committee had a special meeting with three PGA representatives — Harold Sargent, then PGA President; Tom Crane and Harvey Raynor. Valuable comments were received, and some were incorporated in the Rules. It has become a practice for PGA representatives to meet with the USGA at least once a year to discuss the Rules.

The process of amending Rules is tedious, but that very process tends to insure that the final product is pretty well tested. Even so, slips do occur. But two things are worth remembering:

First, the Rules of golf are a living code, the evolutionary product of long experience; quick isolated changes can be dangerous, for the Rules are closely dove-tailed.

Second, for all the changes of detail which the Rules of Golf have undergone, the game is fundamentally the same glorious sport it has always been.

Nourishing the Spirit of Golf

From these very sketchy notes on USGA history, perhaps you have caught the idea that practically all of the USGA's work centers in just one thing—**the nourishing of the wonderful spirit of golf.**

In this work, the professional golfer has played a significant part. On the firing line at his club, or on the tournament circuit, day by day he unconsciously exerts an influence in ways far beyond the matter of swinging a club.

And now that we have had our look backward, it would be appropriate to ask ourselves one question as we look forward: "What sort of history are we writing today?"

CLUB OPERATIONS SURVEY ISSUED BY MET. GOLF ASS'N.

Data supplied by 66 clubs

Did you blanch when your club's entertainment committee reported a bill of $650 for the orchestra at the last dinner-dance? Should your club make an extra charge for use of the swimming pool? What about the testy problem of handling delinquent accounts?

The Metropolitan Golf Association's new study, "Golf Club Operations," doesn't purport to serve up ready-made answers to these questions. It does, however, offer a frame of reference for any club member pondering these and the myriad problems involved in running a golf club.

Based on a 28-page questionnaire containing more than 600 different inquiries, the survey has been published by the MGA and made available to non-members for $8 per copy. The MGA's address is 40 East 38th Street, New York 16, N. Y.

The MGA, which bases its reports on data supplied by 66 clubs in the Metropolitan New York area, believes that "Golf Club Operations" is the broadest survey of golf club policy and procedure ever conducted.

New Statistics

It contains thousands of new statistics on costs, expenditures, policies and procedures in all areas of club activity for the fiscal year which ended in 1960.

The purpose of the work is stated in a preface which says: "The image of a golf club as an attractive, capacious center of healthful physical activity, leisure time relaxation and stimulating social relationships tends to obscure the stern reality of its economic needs.

"A club is a business operation at any level of membership size, income and plant investment. While it is not operated for cash profits for its member-owners, it must make a profit to assure continuity stability, and proper maintenance and improvement.

"Profitability in a club operation is often an elusive goal. Balancing income and expense can be a strenuous effort that makes members unhappy about higher charges and reduced service.

"While there are no pat solutions to profit problems in this book, its information holds many ideas for club officers and managers, in revenue realization and in all other areas of club operation. Essentially, this book is a report of what clubs actually do in their management policies and procedures."

Actual operating figures for four unidentified median clubs in different income groups showed that operating costs per regular member greatly exceeded annual dues. To break even or show a small profit clubs must earn substantial revenue from other sources, such as dues from non-golfing classes, restaurant and beverage sales, locker rentals, and incidental fees.

Challenging Questions

The editors, after digesting a massive amount of data, have included a series of 10 "Challenging questions for club executives." Among these are:

"Should we suggest to inactive regular members that they transfer to house membership, so that we can receive new members now on the waiting list, who will use our facilities regularly?

"Should we modernize the course? With the newer methods of moving earth and trees, it might be a good investment. Maybe we could add a new starting point; close some meaningless bunkers and traps that require maintenance; and possibly speed the play on busy days.

"Are our clubhouse accommodations and our restaurant facilities attractive and efficient? Would a new kitchen, and air conditioning, be worthwhile? When our members go out to dinner, are they more apt to turn in at that glamorous new roadhouse with the lighted parking lot?"

THE REFEREE

Decisions by the Rules of Golf Committees

Example of Symbols: "USGA" indicates decision by the United States Golf Association. "R & A" indicates decision by the Royal and Ancient Golf Club of St. Andrews, Scotland. "61-1" means the first decision issued in 1961. "D" means definition. "R. 37-7" refers to Section 7 of Rule 37 in the 1961 Rules of Golf.

PENALTY: NEVER MODIFIED FOR FAILURE TO HOLE OUT IN STROKE PLAY
MARKER: NOT PENALIZED IF WRONG SCORE RETURNED BY COMPETITOR

USGA 60-50
D. 18, R. 1, 11-3, 23-3, 36-5, 38-2

Q: In a stroke play competition, the competitor failed to hole out on the sixteenth hole with her fifth stroke. In anger, she putted the ball off the green, picked it up, and teed off on the next hole. Her scorer recorded a six for her at the sixteenth. When the round was completed, her card was attested by the scorer and she returned it to the Tournament Chairman.

At this point I called the error (quoting Rules 23 and 38) to the attention of the Tournament Chairman.

The competitor admitted her error, and stated that she felt she should be disqualified. She said further, however, that she was of the opinion that the members of her foursome were most unsportsmanlike in not calling the error to her attention on the sixteenth green so that she might have had opportunity to complete the hole.

The majority of the club voted, in view of the unsportsmanlike act on the part of the fellow-competitors, to modify, in accordance with equity, the penalty of disqualification in favor of a two-stroke penalty for the player and the scorer.

I would be appreciative if you would advise me of how you would have ruled in this case.

Question by: MRS. D. E. MOUNTOURE
San Leandro, Calif.

A: We disagree with the Committee's ruling; however, under Rule 11-3, its decision is final.

In failing to hole out on Hole 16, the competitor, in addition to violating Rule 23-3, violated Rule 1—the basic rule of golf—the penalty for which is disqualification.

Rule 36-5 empowers the Committee to waive or to modify a penalty of disqualification "in exceptional individual cases." However, Rule 36-5 should never be invoked in the case of disqualification for failure to hole out on a hole in stroke play; the competitor in such a case has not played the course.

Failure of fellow-competitors to advise the competitor that she had failed to hole out before she left the sixteenth green does not constitute a "good reason" for modifying a penalty. It is the duty of the

competitor to acquaint herself with the Rules.

We note that the Committee assessed a penalty (presumably under Rule 38-2) against the competitor's marker (scorer). This was wrong as Rule 38-2 provides in part: "The competitor is solely responsible for the correctness of the score recorded for each hole." Under Definition 18 a marker does not have to be a fellow-competitor.

CLUB PLACED ALONG LINE OF PLAY TO AID STANCE: CONSTITUTES INDICATING LINE OF PLAY

USGA 61-36
R. 9-2

Q: A player habitually uses a golf club to guide him in lining up his tee and fairway shots. He does this by placing the club down with the grip facing the direction to which he intends to hit. He then assumes his stance and proceeds to hit the ball. He claims he uses the club only to position his feet and not to indicate direction. Is this a violation of the Rules?

Question by: CARMEN CEO
Seneca Falls, N. Y.

A: Yes. The player's act violates Rule 9-2 which prohibits placing a mark to indicate the line of play.

The player's claim that he uses the club only to position his feet and not to indicate direction is not valid as an aid in placement of the feet for the stance would also directly indicate the desired line of play.

ADDRESSING THE BALL IN BUNKER

USGA 61-40
D. 1, R. 27-1c, 27-1d

Q: A ball hit into a bunker was barely hanging on a steep slope in such a precarious position that one could not tell what kept it from rolling. The player approached the ball and was in the act of spreading his feet near the ball for, but had not yet completed, his stance when the ball moved. Under Rule 27-1d, did the player then incur a penalty stroke or was he allowed to first "dig in" for a solid footing before the moving of the ball would have caused him to incur a penalty stroke?

Question by: JACK WALDRON
Bethesda, Md.

A: Since the ball moved before the player had addressed it, the player did not incur a penalty stroke under Rule 27-1d. Under Definition 1, in a hazard a player has addressed the ball when he has taken his stance preparatory to making a stroke. Whether the stance has been so taken is a question of fact to be determined in the light of the circumstances of each case. In a bunker, some "digging in" normally would be expected to precede the completion of the stance.

It should be noted, however, that if the player's approach to the ball or the spreading of his feet for his stance in fact caused the ball to move, the player would incur a penalty stroke for accidentally moving the ball under Rule 27-1c.

WRONG INFORMATION IN STROKE PLAY DEFINED. FAILURE TO INCLUDE PENALTY IN SCORE

Revised USGA 61-10
R. 11-1b, 11-4, 36-5, 38-3

(Answer 1 in original Decision 61-10, dated Feb. 23, 1961, is hereby cancelled)

Q.1: Please explain the meaning of the term "wrong information" in Rule 11-1b with regard to a player's failure to include a penalty in his score.

A.1: Rule 11-1b is a statute of limitations. It prevents the imposition of penalties after the close of a stroke play competition and thereby serves the important purpose of barring late claims. The only exception is for "wrong information."

Whenever a claim is raised after the close of a stroke play competition, the Committee must decide whether the Rule or the exception applies. The answer will depend largely upon the circumstances of the particular case and the equities as they appear to the Committee. So varied can these be that it would not be feasible or wise to lay down categorically all the precise rules of construction. It might be said in passing, however, that the difficulties inherent in arranging, long after the event, for the revision of the results of the competition, the place winners and the distribution of prizes, as well as the need to discourage late assertion of possibly immaterial claims, should induce Committees to resolve doubts in favor of applying the Rule rather than the exception.

Similar considerations make it clear that "wrong information" was not intended and should not be interpreted, to

mean any omission of a penalty from a score in stroke play.On the other hand, the term should be interpreted to mean any such omission which the Committee finds to have been willful or even conscious. In the area between, it must be left that the Committee should decide the matter in the light of all the relevant circumstances, including its own findings as to whether or not the player knew of the Rules infraction. If it is found that he did, then, in the absence of evidence to the contrary, he would be presumed to have omitted the penalty consciously and the exception would become operative.

PENALTY, STROKE PLAY: APPLIED BELATEDLY IF WRONG INFORMATION GIVEN

Q.2: It was found that the scorecard of a player in the qualifying round of a match play tournament did not include a penalty on a certain hole through wrong information which he had given. This player had advanced in match play before the fact was discovered. In such a case, is the player still subject to disqualification under Rule 11-1b?

A.2: Yes, and under Rule 38-3 the penalty of disqualification should be applied unless waived by the Committee in conformity with Rule 36-5.

MATCH PLAY: EFFECT OF BELATED DISQUALIFICATION ON TOURNAMENT

Q.3: If your answer to Question 2 is affirmative and the Committee disqualifies a player who has advanced in match play, what then should the Committee do to be fair to the players beaten by the disqualified player?

A.3: The Committee must determine further procedure in equity (Rule 11-4). For example, the Committee might either: (a) call off the competition; (b) reinstate the player last eliminated by the player who gave wrong information, although that would be unfair to the other players eliminated by him; (c) require all players eliminated by him to play off for his forfeited position; or (d) consider the penalty applicable only from the time of its discovery by the Committee, thus giving his next opponent a default.

S. TAKAHATA, Hirono Golf Club, Japan

OBSTRUCTION: DETERMINING NEAREST OUTSIDE POINT IS NOT "MEASURING THROUGH"

USGA 61-33
R. 31-2

Q: How would a player obtain relief from a barn in the following situation?:

The ball enters the barn through a side door near the front, strikes the inside of the front wall, rebounds backward, and comes to rest against the rear wall, still inside the barn.

In obtaining relief under Rule 31-2, if the ball were brought back to the point of entering the barn (the door near the front), it would have to be dropped nearer the hole than the place where it came to rest inside the barn. To drop the ball outside the rear wall of the barn would require measuring through the obstruction.

Question by: CHARLES H. STEWART
Mississippi City, Miss.

A: In proceeding under Rule 31-2, the player must drop the ball within two club-lengths of that point on the outside of the obstruction nearest which the ball originally lay; the ball must come to rest not nearer the hole than its original position.

The starting point for measuring is the outside of the rear wall of the barn, immediately behind the place where the ball lay.

The prohibition in the Rule against measuring through the obstruction involves not the process of determining the nearest point on the outside of the obstruction but the process of measuring two club-lengths from that point after the point has been determined.

BALL ON PUTTING GREEN: DEFINITION OF

USGA 60-55
D. 25, R. 35-1d

Q: Rule 35-1d provides: "A ball lying on the putting green may be lifted and cleaned." May a ball be lifted and cleaned under this Rule if any part of it is on the putting green or must more than half of it or all of it lie on the green?

Question by: SAM RANDOLPH
Santa Barbara, Calif.

A: A ball is considered to be on the putting green when any part of it touches the surface specially prepared for putting.

Chemical and Cultural Control of Turfgrass Diseases

By JAMES L. HOLMES
Agronomist, Midwestern Region, USGA Green Section

The fungi which are presently recognized as parasites on turfgrasses have been widely discussed. We are primarily concerned here with diseases in the Midwest, but these considerations will generally apply throughout any temperate zone of the world.

The plant pathologist is involved in the recognition of disease-causing fungi, their epidemiology and control, primarily by chemical means. The agronomist is interested in general recognition and control, primarily through cultural means. Through the years turf growers have come to realize that chemical disease control and disease control through cultural manipulation are about equal in importance. It is intimated here that turf managers can be called neither pathologists nor agronomists. When dealing with turf, consider all facets of a problem and then pursue a course which promises the greatest results.

Results when dealing with disease control of turf are consistent, inconsistent, ambiguous, complete, incomplete, enlightening and frequently quite maddening. This, of course, points out the incompleteness of our knowledge and understanding in this field.

Listed below are diseases in a possible order of importance in the Midwestern area and suggested methods for chemical control. More specific chemical control information is available in numerous publications from turf fungicide manufacturers.

COOL SEASON GRASSES

Fusarium sp. (Fusarium patch; pink snow mold)

Visible symptoms of attacks by this fungus are most readily detected either under melting snow or in areas of free moisture resulting from melting snow. Dead areas usually from ¼ to 3 inches in diameter have a characteristic pinkish or reddish periphery.

One of the reasons for the seriousness of this fungus is that it frequently is not "most readily detected." The author has found microscopic evidence of this fungus and apparent damage to turf, primarily bents and **Poa annua,** during all 12 months of the year. Small spots the size of a paper match head develop on diseased turf especially when the environment is cool and damp and shade and tree root competition a factor. The best way to define this symptom is a "salt and pepper effect." More often than not these symptoms go unnoticed until the mower man or the golf course superintendent begins to notice that "something is wrong." By this time consider-

able leaf surface (also perhaps crown and root) has been lost and severe damage may have occurred.

Obviously, spring and fall are the seasons when **Fusarium** sp. will be the most damaging. Fungicide applications should be regularly made in early spring as a guard against this serious pathogen. Conceivably **Fusarium** sp. could be indirectly associated with the severity of parasites which follow later in the season by initially reducing the natural vigor and resistence of turf.

During the warmer and even drier months Fusarium sp. can be microscopically detected in diseased and/or dead turf areas along with other fungus organisms. The extent of damage is not definitely understood, but surely this fungus is intimately associated in a complex with other leaf disease-causing organisms, and involved in the unexplored area of root maladies. Mercurials, both organic and inorganic, and mixtures of these and broad spectrum turf fungicides seem to give the most positive and long lasting control.

Helminthosporium sp. (Leaf spot, melting out)

Visible symptoms of attack by this fungus are characteristic dead spots on individual leaf blades and/or dead areas varying in size from ¼" to indefinite. Individual dead spots on leaves usually have tan colored centers surrounded by blackened borders. **Helminthosporium** sp. is known to be parasitic on all the grasses with which we deal.

Here again, one of the dangers of this fungus is its subtlety. It often goes undetected for a period of time and faulty diagnosis is common. One of the reasons it is listed among the most important or severe pathogens is its tendency to kill stems and crowns. No doubt it plays a starring role in the previously mentioned, little explored area of root maladies.

Damage from **Helminthosporium** sp. has been detected year around but tends to be most pronounced during cool, humid weather. However, attacks have been severe during hot, dry periods on high, well-drained areas. Apparently species differentiation is a factor here. The author believes **Helminthosporium** sp. is the most omnipresent and omnivorous genus of fungi with which we deal. The fact that hundreds of species of this genus of fungus are recognized tends to verify this.

Chemical controls for this malady are not consistent. Here again, this no doubt is dependent upon the particular species in question. At times a mixture of zinc ethylene bisdithiocarbamate (Zineb) and iron sulfate offers the most positive control. At other times mecurials and mixtures of them and broad spectrum turf fungicides are the most effective. Antibiotic fungicides also offer positive control either alone or in combination.

Pythium sp. (Cottony blight, grease spot)

Visible symptoms of attack by this fungus characteristically follow presence of free moisture and usually higher temperature. Diseased spots which vary in size from ½" to include an entire green (or larger) have a black-greasy appearance which later turns straw (dead grass) color.

Perhaps many will question the consideration of this fungus in importance before various other disease causing organisms. Its importance is not because it appears so regularly in the Midwest, but because when it does appear there seems to be only limited chemical control available. Reports of partial to complete control are frequent but no regular or constant control has yet been developed. Daily applications of broad spectrum turf fungicides or a mixture of Captan and antibiotics are the most frequently used chemicals. Concerted efforts must be made to dry the diseased area in any way possible such as through the use of sand or lime and temporarily improving surface drainage with hollowtined forks, etc.

Rhizoctonia solani (Brown patch); **Sclerotinia homoeocarpa** (Dollar spot); **Typhula** sp. (Snow mold)

In many respects these pathogens are quite similar and they react similarly to chemical control treatments. Visible symptoms of attacks by these fungi are quite similar. The characteristic variation is in temperature requirements: snow mold—cold; dollar spot—temperate; brown patch—hot. (Physiologic races of Rhizoctonia have been found which will thrive under moderate temperatures.) The fungi which causes these

diseases all require free moisture and in general wet, humid conditions in order to attack and be damaging. They are all easily controlled by chemical means, which reduced them from the most damaging turf disease causer to a secondary role.

A mixture of inorganic mercuries continues to give the most positive and long lasting control. About the only time this chemical mixture fails to give satisfactory control is when excess moisture is present for an extended period of time. Thiram, phenyl mercuric acetate and other chemicals also offer control.

Gloeocercospora sorghi (Copper spot); **Corticium fuciforme** (Red thread)

Visible symptoms of attacks by these fungi are quite similar. Copper spot is just that, copperish colored spots 2" or 3" in diameter appear speckled over the affected area. Red thread does not appear as regular spots but rather irregular and reddish strands of fungus are visible. Environmental conditions are similar; humid and cool to mild.

These diseases rarely appear in the Midwestern area. Occasionally they are present in the Detroit area and rarely in the Chicago area. Perhaps this is true because exact environmental conditions are lacking. Also, these organisms would attack in spring or fall; Cadmium compounds are effective long lasting controls for these maladies and are generally used at this time of year in these areas.

WARM SEASON GRASSES

Considerably less has been determined and thus written about fungus diseases of the warm season grasses. Zoysia and bermudagrass are the species involved as far as golf turf in the Midwest is concerned.

Some years ago Dr. Frank Howard, Pathologist at the University of Rhode Island, commented that "the reason little is said about diseases of warm season grasses is that they are relatively newly introduced into this country, thus the diseases have not caught up with them yet." To a considerable extent this is still true. However, it is beginning to appear that a number of fungi are becoming increasingly more damaging to bermudagrass or are beginning to "catch-up" with it. It is believed that "winter kill" of bermudagrass (primarily U-3) is largely the result of attacks by parasitic fungi when bermudagrass is in its dormant stage. Under microscopic examination **Helminthosporium** sp. and **Fusarium** sp. have been found repeatedly on dormant stems, leaves, roots and rhizomes of U-3.

As far as summer diseases of these grasses are concerned, they still seem to be relatively minor. **Helminthosporium** sp. appears to be increasing in incidence and severity on U-3 bermudagrass. Possibly U-3 grows so rapidly during hot weather that it simply out-produces the disease.

Control measures for disease of these grasses are the same for corresponding diseases on cool season grasses at this time. Perhaps other controls will be developed in the future.

Cultural Control

The turf specialist will note that the leaf spot type of diseases such as **Curvularia** sp., **Colletotrichum** sp., **Septoria** sp., **Phyllosticta** sp. and others have been omitted. It is believed that by and large these are not primary turf pathogens but are secondary or damaging only when the grass has been weakened through some other influence. These influences can be anything which weakens turf: attacks by other fungi, traffic, shade, tree root competition, excess of mat and thatch or organic matter, lack of air circulation, mechanical damage, damage from excesses or fertilizers-herbicides-fungicides, presence of insects and shortage of plant nutrients. Therefore, even though most of these secondary organisms can be checked or controlled by the use of chemicals, they will rarely be troublesome if primary parasites are controlled and the various cultural controls are practiced.

The practice of cultural control also affects the incidence and severity of the primary pathogens but cannot stop them completely. One item is consistent in the epidemiology of the primary parasitic fungi (likewise the secondary). This is the presence of free moisture. It has been determined that proper drainage is an excellent fungicide. The most important concept of effective cultural disease control, and one which is regularly ignored, is the assurance of ade-

quate surface and sub-surface drainage. Of the fungi known to attack grass, apparently all require free moisture in order to penetrate the above ground plant parts. Few of these fungi will develop to damaging proportions if surface and soil water is not in excess. Under waterlogged conditions all of the known parasitic fungi can and do develop into serious problems with which it is difficult to cope. Therefore if water drainage is assured, our primary cultural disease control concept is a guarantee. A considerable amount has been done in this regard; greens and other areas now can be constructed so that adequate and permanent drainage is assured.

The next most important cultural control concept is considered to be traffic, primarily cart and foot. Without the golfer it would be relatively easy to maintain golf courses and control the diseases thereon. However, we must face the fact that golf courses are present for the enjoyment and abuse of the golfer and plan accordingly. Turf, damaged as a result of excessive traffic, is susceptible to severe attacks from both primary and secondary organisms. Not only must proper and adequate fungicides be applied but the golf course superintendent must make all efforts to direct traffic over as much of the course as possible thus dispersing it away from localized heavy traffic areas. This is only partially possible and consequently we resort to such things as installation of asphalt cart paths, the building of larger greens and tees (and courses for this matter), the placing of traps closer to greens thus discouraging traffic (foot and cart) and heavy equipment from abusing such restricted areas and the placing of signs and ingenious traffic directing devices in susceptible heavy traffic areas. It is becoming increasingly more apparent that the club must allow its superintendent more uninterrupted time in order to complete his work if they expect him to give them a presentable course. This increase in traffic is reaching alarming proportions. Many clubs are now closing the course to all play on Mondays, as an example.

Other important cultural considerations are dependent upon common sense.

1. Apply proper amounts of plant nutrients. Fungi vary in their pathogenic severity according to availability of nutrients to the grass. Brown patch and pythium diseases are more troublesome when nutrient levels are high. Therefore, the practice of reducing fertilizer rates during hot weather is generally and properly practiced.

Dollar spot is less of a problem when nutrient levels are high. However, Fusarium patch can be more of a problem when nutrients are in excess. As previously stated, possibly Fusarium patch is one of the most damaging diseases in the Midwestern area. Careful use of nitrogen in cooler months, regardless of the dollar spot picture, is a safeguard.

There is so little proven through scientific endeavor along this line that the assumptions and practices followed have been determined through observation by golf course superintendents. This is a subject about which more information is needed.

2. Remove trees in order to decrease shade and tree root competition. If entire trees are not removed, prune tree roots and limbs as necessary. Not only are fungi more damaging to tender shaded grass but evaporation of surface moisture is reduced in shaded areas which increases activity of fungi.

3. All of the fungi discussed are known to be facultative organisms. That is, they can subsist on both living and dead material. If a thick layer of mat and thatch or organic matter is present disease-causing organisms are also present—either in a growing or dormant stage in this layer of organic matter. When turf loses its resistance to these omnipresent disease-causing organisms because environmental conditions favor the fungi or when turf is weakened through some cultural aspect such as excessive traffic, trees, etc., the fungi are then capable of attacking and causing disease.

A thick layer of organic matter also interferes with water movement down to and through the soil. This layer will sometimes absorb and hold free moisture while under other conditions it will shed applied water and become dry.

Thus the entire irrigation or water relationship is confounded. However, our interest here rests in the accumulation and presence of surface moisture. As we

previously discussed, fungi benefit greatly as a result of this moisture.

Spiking, aeration, aerothatching, and rebuilding greens are often done in an effort to reduce this organic layer and thus effect cultural disease control. Basic soil consistency is a consideration here and was discussed under moisture.

CONCLUSION

All turf management practices are either directly or indirectly associated with incidence of disease. As can be seen, chemical control and cultural control of disease-causing fungi are intrinsically interwoven. Cultural control goes a long way in keeping turfgrass disease free (or disease reduced) and unless proper management practices are pursued, even the best chemical controls often fail to stop disease spread. On the other hand, chemical control measures are frequently and regularly necessary especially during periods when adverse environmental conditions prevail, even though the best known cultural practices are followed.

The frustrating aspects of disease control mentioned earlier arise primarily as a result of the lack of basic knowledge. As examples, why will a green, even though located in a similar area or adjacent to other greens, be constantly susceptible to disease while its neighbors remain relatively disease free. The author has seen examples of courses located in the same general area; one course receives the best possible management known, yet disease is a problem even though fungicides are regularly and frequently used. The other course receives far inferior management and less frequent and regular fungicide applications, yet diseases are much less of a problem and in general, turf is healthier. Of course, these are exceptions. Nonetheless, they exist.

COMING EVENTS

February 26-March 1
Cornell Turfgrass Conference
Cornell University
Ithaca, N. Y.

March 5-6-7
Midwest Regional Turfgrass Conference
Memorial Center, Purdue University
Lafayette, Indiana

March 8-9
Massachusetts Turfgrass Conference
University of Massachusetts
Amherst, Mass.

March 13-14-15
Iowa Turfgrass Conference
Memorial Union Building
Iowa State University
Ames, Iowa

March 22-23
Michigan Turfgrass Conference
Michigan State University
East Lansing, Mich.

Potassium — That Mysterious Macronutrient

By CHARLES E. CROLEY
Agronomist, Southwestern Region, USGA Green Section

Of the various soil minerals known to be essential to plant growth, potassium was among the first to be recognized. One of the first observations of potassium-plant relationships was that potassium is required in relatively large quantities by plants. Yet, since those early observations, progress has been slow in understanding the specific part potassium plays in plant growth and development. Through scientific investigations and practical observations we have learned that plant uptake of potassium is often higher than any other mineral and that a deficiency of potassium will give a very marked decrease in growth and, if the potassium level is low enough, even death of the plant. Since the beginning of the 20th century, emphasis on quality of crop production, especially in turf management, has increased to a prime factor. Here, too, potassium and plant quality are very closely related. It seems only profitable, then, to survey briefly what is known of the potassium-plant relationships.

Function of Potassium in Plants

Voluminous amounts of investigations on potassium-plant relationships have clearly indicated that unlike nitrogen, phosphorus, calcium, and magnesium,

potassium is not a permanent component of any organic compound or structural part of plants. Its total apparent existence is in the form of soluble inorganic and organic salts, the greater portion being the inorganic forms.

Recent investigations have indicated that potassium affects the metabolic activities of plants in several ways, most of which appear to be enzymatic. Lawton and Cook report that evidence now available shows that potassium affects the following processes: (1) synthesis of carbohydrates, (2) translocation of carbohydrates, (3) reduction of nitrates and synthesis of proteins, particularly in meristem tissues, and (4) normal cell division. It is also suggested that potassium plays a part in maintaining turgor in plant cells as well as increasing disease resistance. Research further indicates to some investigators that potassium may affect photosynthesis through its influence on chlorophyll.

Concerning carbohydrate synthesis, it has been reported that a decrease in available potassium is associated with a decrease in carbohydrate content of the plant and that high potassium content is necessary for high carbohydrate synthesis. It has been suggested that potassium may play a major part in the formation of more complex sugars and starches from the simple sugars in plants—a lack of potassium appeared to cause an increase in simple sugars as compared to total carbohydrate.

Practically coupled with potassium-carbohydrate studies has been the investigations of potassium as related to the structure of stems and cell walls. It is generally held that adequate supplies of potassium are necessary for the formation of stiff straw or stalk. Researchers have reported that when carbohydrates are present in high amounts, stem structures are likely to be strongest. Such a report strongly supports the potassium-stiff straw relationship. But if carbohydrates are used up in protein synthesis as when high amounts of available nitrogen are present, stems and plant tissue may not be stiff even though there is an abundant amount of potassium present in the plant.

There are a few workers who have suggested that the presence of potassium and calcium in the plant sap increases the uptake of nitrate nitrogen. These same investigators state further that such activity does not seem to hold true with all species of plants.

There is considerable belief, however, that potassium definitely influences the synthesis of proteins in plants. Some investigators believe there is a direct relationship between potassium and protein synthesis while others hold that the relationship is an indirect one. The overall effect agreed upon is that potassium-deficient plants are generally lower than normal in protein content. Along this same line it is suggested that with high nitrogen supply and deficiency of potassium there may result a toxic condition to plants from a too high accumulation of ammonia in the plant.

A number of reports have been made that potassium is in some way associated with cell division and actively growing plant tissues. Often it has been found that in potassium deficient plants the potassium is moved from older tissues to the actively dividing cells of the meristematic tissues. The effects of this phenomenon are observed in grasses by a yellowing of the margins and tips of grass blades. In such a case the potassium, being deficient in the plant, has migrated to the base of the leaves where intercalary meristematic tissues exist. There is still a great deal of doubt as to the function of potassium in cell division, but the feeling is that it is associated with protein synthesis.

Adequate levels of potassium in the plant have been reported to maintain and in some cases increase disease resistence in the plant. Here again just how potassium causes this effect is not known. A general belief is that it is brought about by the ability of potassium to regulate chemical reactions in the cells of the plant. When potassium is deficient, there usually exists excess nitrate and phosphorus, thinner cell walls in epidermal tissues, reduced production of amino acids because nitrate reduction is suppressed, a marked decrease or halt in the accumulation of carbohydrates, a failure to produce new cells for want of essential amino acids for the protoplasm, and slower growth of meristematic tissues that would permit replacement of

diseased tissues. Under such conditions caused by potassium deficiency, disease organisms can more easily enter the thin cell walls, obtain the abundantly available nitrogen necessary for their growth, and more easily damage plant tissues which the plant is unable to replace at a competitive rate.

Potassium is also given partial credit for the maintenance of proper turgor in plant cells. Turgor is the state of living cells being plump and swollen as a result of internal water pressure. In this respect it is reported that potassium affects the cell sap and helps to regulate the degree of swelling and the water economy of cells.

Concerning potassium and photosynthesis, some workers suggest that potassium has an indirect effect. It is known that photosynthesis takes place in the chlorophyll molecule, and that CO_2 as well as water and light are needed for the process. Some scientists feel that potassium enables the chlorophyll molecule to accept CO_2 more readily, which in turn affects the photosynthesis process—the process from which plant food is derived. It is also thought that potassium, perhaps by way of activating enzymes, plays a definite role in the manufacture of the chlorophyll molecule.

A. G. Kennelly has been quoted as summarizing the role of potassium in plants as follows: "Potassium is important in the general health of the plant, particularly in developing sturdiness and disease resistance. It helps to promote the growth of woody tissues and usually improves texture, color, and quality."

Supply of Potassium to the Plant

The plant receives its potassium from the soil. It is generally known that heavy soils or soils high in clay content have the ability to hold more available potassium than light soils or those high in sand content. The available potassium is supplied to the soil from the weathering of potassium minerals, which contain unavailable potassium. Generally the unavailable potassium makes up approximately 99% of the total potassium in the soil. In many cases the amount of such minerals in the soil and the rate of weathering of these minerals is great enough to supply adequate amounts of available potassium to the plant. However, when the weathering of enough minerals is too slow or the available potassium is lost at too rapid a rate by plant removel, leaching, and erosion, potassium must be added to the soil in the form of fertilizer.

The available potassium is taken into the plant by the root. There is widespread belief that the root cells immediately associated with the uptake of potassium and other minerals as well must exert a considerable amount of energy in order to absorb the potassium.

It has been well recognized that soil aeration is necessary for normal root growth and nutrient absorption by roots. And it has been observed that poor aeration apparently has more pronounced inhibitory effects on potassium than on any other elements. The effects of aeration on potassium absorption are primarily on the plant roots and not on the status of potassium in the soil. The effects of a lack or adequate aeration are due to either a lack of oxygen to the roots, or a toxic effect of too much carbon dioxide on the roots, or both. This point still remains a mystery. Excess soil moisture and soil compaction affect the absorption of potassium in that they limit soil aeration. Unless a soil can be adequately drained and relieved of compaction, areation will be limited.

A number of investigators have found that very low soil moisture considerably reduces the absorption of potassium by the plant. This effect is a result of both the dehydration of the plant and a reduced availability of the soil potassium.

Most workers have concluded that mineral nutrient absorption is reduced under low environmental temperatures. It has been found that within the range of 50° F. and 77° F. potassium absorption changed directly as the temperature changed.

Potassium Fertilization of Turfgrass Areas

There are a number of potassium fertilizer materials. The most widely used material, however, is potassium chloride, commonly called muriate of potash, which contains from 50 to 60 per cent

K_2O. This fertilizer can be applied alone or in a fertilizer mixture with phosphorus and/or nitrogen materials.

The amount of potassium fertilizer to apply and the time to apply it will depend on several factors. These factors are: (1) The amount of available potassium in the soil. If, at any time during the growing period of the turf the available potassium is not sufficient, potassium will need to be added in a quantity high enough to adequately raise the potassium level. (2) The kind and amount of clay in the soil. Some types of clays hold more potassium than others, and some clay types hold potassium in a more available form than others. If a soil is high in clay, it will be able to hold more potassium than a soil which is primarily sandy. A sandy soil will need small but frequent applications of potassium whereas a soil high in clay may be able to provide sufficient potassium with larger but less frequent potassium applications. (3) The type of watering program. Where the watering program is heavy, potassium will tend to leach out of the soil more readily than where the watering program is light. (4) Whether or not clippings are removed. Grass clippings contain a considerable amount of nitrogen, phosphorus, and potassium. O. J. Noer has reported that clippings removed from a golf green in Memphis, Tennessee contained nitrogen, phosphoric acid, and potash in the approximate ratio of 3-1-2, respectively. If the clippings are removed instead of being allowed to remain on the turf, potassium will be depleted more rapidly. (5) The kind of grass grown. All turfgrass species and varieties need available supplies of essential nutrients. However, some turfgrasses are cool season types and others are warm season types, and because of this difference the various types require greater amounts of nutrients at different times of the year. (6) The particular management of the turf. In general a turf that is mowed close and frequently will need more potash than one that is mowed higher and less frequently. A turf area that is designed to be kept in an active growing state the year round by either overseeding warm season grasses or by the use of permanent cool season grasses will more than likely need to be fertilized with potash more frequently and with an overall increase in amount of potash. On the other hand a turf area that is allowed to go dormant or partially so in the winter will not need an addition of potassium during the winter. In many cases the winter dormant period gives the potassium minerals time to weather, the result of which is at least a partial replenishment of the available potassium in the soil. If such weathering is inadequate to supply all the needed available potassium for the following growing season, applications of potassium will need to be made in the spring and anytime thereafter if the available potassium supply becomes short. It is also a good policy to have sufficient quantities of available potassium in the soil in the fall in order that the turf can become "hardened" for the cold winter temperatures. It is felt that plants well supplied in potassium and not overly tender due to high applications of nitrogen in the fall will be more capable of surviving freezing temperatures of the winter. There is also the possibility of getting too much available potassium in the soil. Plants are apparently unable to regulate the uptake of potassium; and if the soil supply is high enough, a so called luxury consumption may result. Under such conditions, the high potassium content in the grass plant may cause an excessive amount of stiffness in the stems and leaves as well as other undesirable or harmful effects. (7) The general weather conditions of the area. If there is a great amount of rainfall there is apt to be a need for more available potassium in the soil to replace that lost by leaching.

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ANNUAL INDEX TO USGA JOURNAL AND TURF MANAGEMENT
Volume XIV — April, 1961, Through February, 1962

IT'S YOUR HONOR

Words of Gratitude

To THE USGA:

I cannot find the words to express my feeling in being so highly honored with the Bob Jones Award for sportsmanship.

Frankly, I do not know what I have done to deserve it.

But I do know this—that without good sportsmanship, without observance of the Rules of the game, golf is meaningless.

Bob Jones has personified ability, quality and character, and the USGA has always held up high standards for all of us to try to observe.

To think that I may somehow have contributed something to golf in that sense is most gratifying and humbling.

HORTON SMITH
Detroit, Mich.

A New Professional

To THE USGA:

It is with mixed emotions and considerable thought that I am writing this letter to you of my intentions to apply for membership in the Professional Golf Association.

Upon returning from the Americas Cup Match, several benefits were pointed out to me. After much thought I have concluded that due to the several sources of income available to me at the professional level, it would be unfair to my family not to accept this new responsibility.

I also have many regrets. Among these are: that my decision precludes my being eligible to defend the USGA Amateur Championship in 1962; it ends eight years of association and competition in amateur golf and international matches; and that many well-wishing friends would like me to remain at the amateur level.

I am sure that the pleasant relationship with the USGA will remain the same. I can honestly say that in competing in your tournaments since 1953, you properly administer the best tournaments in all golf and my respect and admiration has grown many-fold during those years for the organization. Without the USGA, the high standards which amateur golf now enjoys could not be maintained; these standards are the basis of all golf, amateur or professional, and are the reasons why golf has escaped the bad publicity and scandal which some other sports have received.

JACK NICKLAUS
Columbus, Ohio

Wants 15 Clubs

To THE USGA:

I would like to go on record in agreeing with Mr. V. Wells Brabham, Jr., and his letter published in the November JOURNAL. I believe the 14 club rule was made to eliminate the practice of most professionals and some top amateurs from carrying 18 to 20 clubs that most caddies could not carry.

When I started to play golf some 50-odd years ago we used only approximately eight clubs. In those days one learned to play golf shots (½, ¾, etc.) with the clubs we had.

Now that the sales promotion efforts of golf club manufacturers have reached the point of producing 2½, 3½ woods, etc., I think that 15 clubs would be a boon to the older golfers so that they could carry a No. 5 wood without eliminating the No. 2 iron or the pitching wedge.

This is offered in the spirit of giving the aging golfer a little break.

PHILLIP W. SIMONS
Longmeadow, Mass.

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