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of the

UNITED STATES GOLF ASSOCIATION GREEN SECTION

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Contents

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Howard F. Whitney

In the death of Howard F. Whitney at his country home at Glen Cove, Long Island, on June 30, the game of golf in the United States has lost one of its best friends.

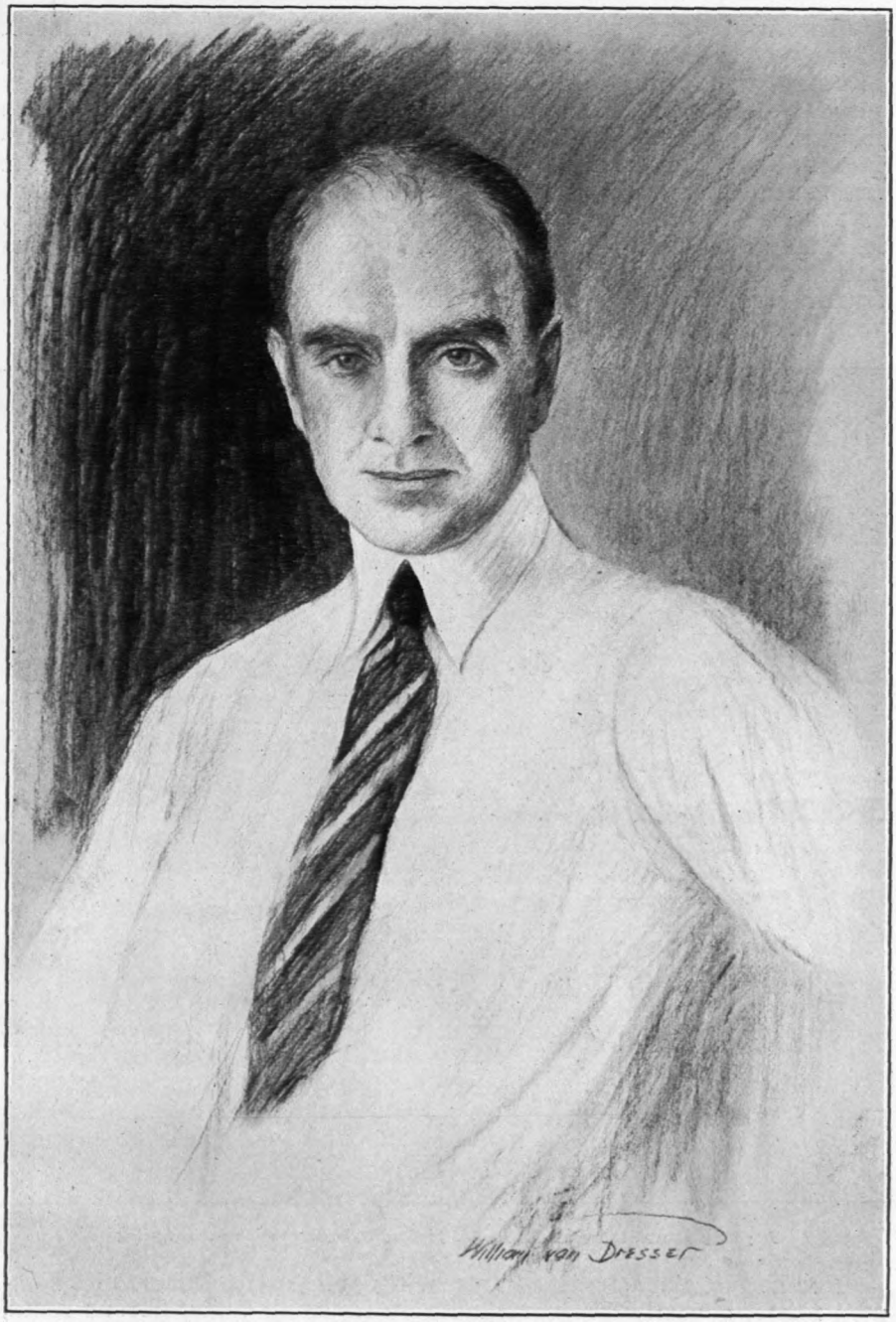
Mr. Whitney became secretary of the United States Golf Association in 1915 and continued in that office until 1920. He was elected to the office of vice-president in 1920 and served a term as president in 1921. Even after his retirement as an officer of the Association he kept up more than an active interest in golf matters and as Chairman of the Rules Committee performed an invaluable service. He was engaged in revising the proofs of the Association's Book of Decisions under the Rules at the time of his last illness.

Mr. Whitney's career generally was a significant one and this is not the time or place to attempt to outline it, but his contribution to the administration of the game was a lasting one. Indeed, it may be fairly said that the present close relations between the United States Golf Association and the Royal and Ancient Golf Club of St. Andrews came into existence on account of Mr. Whitney's individual efforts. In 1926 he was elected a member of the Rules Committee of the Royal and Ancient Golf Club.

To know Mr. Whitney or to be associated with him in any way meant instant admiration for his many qualities. He gave his time and thought unselfishly at all times to the Association. Indeed, during the last few years of his life, when his health was not of the best, he was always ready and willing not only to carry on his work in the Rules Committee but to assist the officers and Executive Committee in any way possible.

He had all of the qualities men admire in the way of character, courage and personality. Out of the many tributes paid to his memory, we quote an editorial from the *New York Evening Post* as being the best summation of his career.

"Howard Whitney's life was that of a fine sportsman. He carried this spirit into his successful business career. He lived it in the arena of American golf, where his greatest athletic service lay. To the national association as secretary, president and member of the rules committee he brought his own high ideals of sport. No one in the last decade did more than he to bring American and British golf together; no one did more to prevent the constantly threatened splits over rules and clubs. Howard Whitney could do these things because of the utter confidence men had in his sportsmanship. He will be mourned today on both sides of the Atlantic."

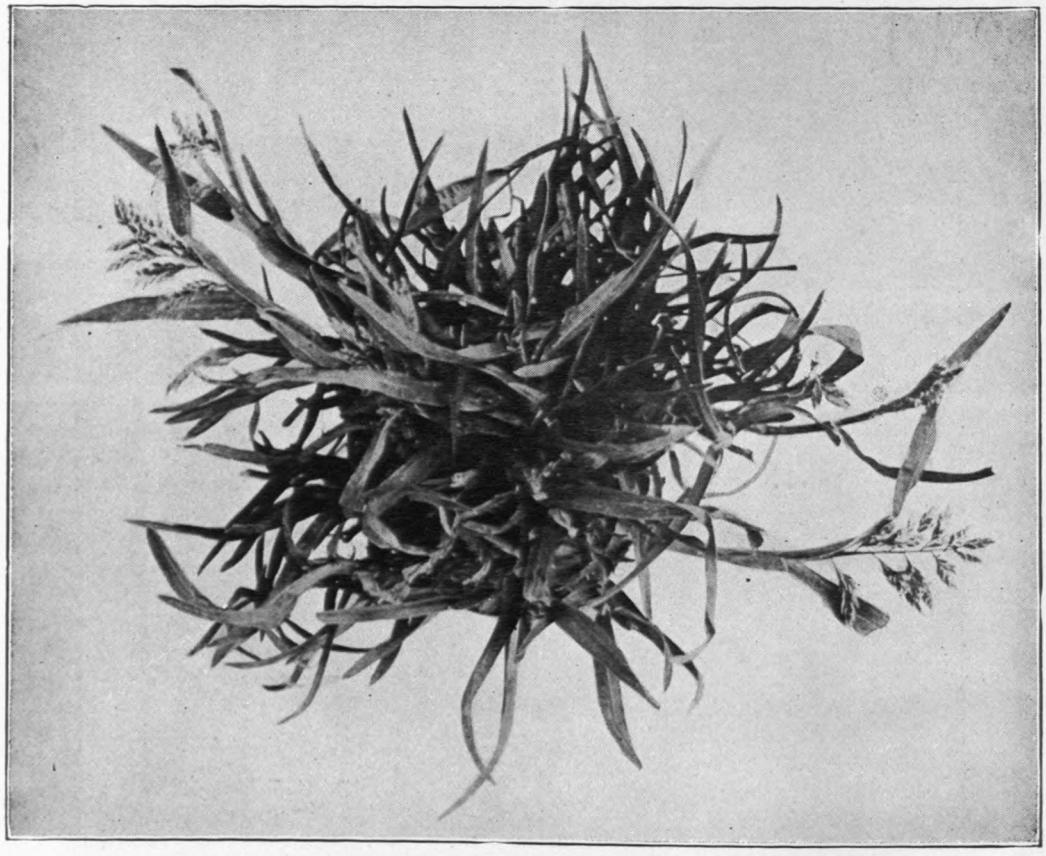


HOWARD F. WHITNEY

Annual Bluegrass (*Poa annua*)

C. V. Piper and R. A. Oakley

In early spring perhaps no other grass is as much the subject of inquiry as the subject of this sketch. At this time of the year it is conspicuous in lawns and on putting greens as well as in shady places where most other grasses do not thrive. On putting greens it commonly appears in autumn, and indeed in the latitude of Washington, D. C., often blooms before winter. In the early spring it grows rapidly and blooms before any other turf grass. When once established it volunteers year after year, increasing in abundance. In spring it is often the most abundant grass in some putting greens and in shady lawns. It vanishes completely by mid-summer, at least as far north as Washington, D. C., but in Philadelphia and northward some plants may be found at any time during the summer.



A young plant of Annual Bluegrass just as it begins to bloom in Spring

Poa annua, the scientific name being quite as familiar as its common name, is easily distinguishable by its small tufts, fibrous roots, bright green not at all bluish color, soft texture, and the cross crumpling of the leaves near the base. The grass is native to Europe, but it now occurs practically everywhere in the United States.

As a putting grass *Poa annua* is not without merit, at least in some latitudes. When abundant enough to make a solid turf, its putting quality is most excellent but a little slow. If only scattered plants occur in the turf, it is sometimes objectionable, as it may make the putting surface uneven. No matter how closely the grass is cut it will still blossom and make seeds at the very surface of the ground. As the grass nears maturity it gradually becomes paler, partly due to the abundant flowers, and is then not so attractive.

On the whole the grass is to be considered desirable rather than a weed. Certainly it would be very expensive to keep it out of greens altogether, and surely its demerits if any are not sufficient to justify the attempt.

Seed of annual bluegrass has occasionally been obtainable in the trade, but usually containing much other grass seed harvested with it.

We hope that this article on *Poa annua*, reprinted from the first volume of THE BULLETIN, will arouse general discussion of the relative merits and failings of the grass as a putting green turf. What do you think of it, and why? In many parts of the country that is an important question, for your whole plan of maintenance will be governed by the answer. In short tell us all you know and believe about *Poa annua*.—Editors.

Let's Get Together

In the June number of THE BULLETIN a notice was published of the proposed meeting of the green committee chairmen and greenkeepers with the Green Section at Washington, to be held the latter part of August. It was requested that the Green Section be notified by all who expected to be present in case such a meeting should be held. The response to this request has been sufficient to justify a definite decision to hold a meeting but it is hoped that many more will be present than have so far signified their intention to do so. It may be readily understood that the more men who are interested in golf course maintenance get together at this meeting where all are free to discuss their problems and the results of methods practised the greater will be the benefit to all. Every man present at this meeting will doubtless have learned something from his experience that would be helpful to his fellow greenkeepers or green committeemen, as the case may be, and it is believed that such a meeting will be an ideal occasion for passing such information on to those that will benefit the most.

The Arlington Turf Garden should be at its best at the time this meeting is to be held, with most of the experiments showing up to the greatest advantage. This turf garden is in reality a laboratory in which the various turf grasses as well as hundreds of maintenance methods are subjected to the "acid test" for the purpose of disseminating between the satisfactory and the unsatisfactory grasses, and the practical and impractical methods of greenkeeping in general. The results of these tests have been the source of much valuable information and they continue to yield abundantly in this respect. A visit to the Turf Garden alone is worth the time and expense of attending the meeting, especially to any green committee chairman

or greenkeeper who has not seen it and had the various phases of the work there explained to him.

There are probably many greenkeepers who would like to attend this meeting but do not feel that they would be justified in bearing the expense of the trip here. In such case it will be to the advantage of the clubs to pay their greenkeeper's expenses and send him on, as there is no doubt that money spent in this manner will be a profitable investment for the club that takes advantage of giving its greenkeeper the information available at a meeting of this kind.

A Green Section meeting will be held in Washington on Monday, August 29. Visitors will be guests of the Green Section for the day. Headquarters will be at the Hotel Hamilton, 14th and K Sts., N. W. To complete the program as scheduled it will be necessary to leave the hotel for Arlington promptly at 9 a. m. Be sure to tell us that you are coming.

Brown Patch Immunity?

By R. H. Patterson

The question of immunity to brown-patch in creeping-bent turf may well be approached with trepidation and misgiving lest one's reputation for veracity suffer the rebuke of Ananias before Peter. If anyone believes he has discovered a species of creeping bent immune to brown-patch he has thus far held his peace. However, in what follows the "discovery" is subject to the usual limits and qualifying considerations of time, place, and the human equation. Furthermore, like many another thing in nature's garden, there are certain irreconcilable ambiguities in the history of the particular piece of turf in question which leave one's conclusions like a lost ball in the rough.

In the early fall of 1922, through the kindness of the late Professor Piper, the writer obtained approximately a square foot of bent turf of a strain with which the Professor had been experimenting since 1916. In the fall of that year he had four selections of creeping-bent turf from the Columbia Country Club, at Chevy Chase, Md. These selections were planted in a nursery at Arlington and tested out under turf conditions. All except one, marked "No. 1 Selection," which is officially known as No. 02529, United States Department of Agriculture, failed to produce a satisfactory turf and were later discarded. In the meantime, however, No. 9 green at East Potomac Park had been planted to one of these strains in 1918. This green was severely attacked by brown-patch in 1919 and practically killed out.

In 1919, No. 9 green at Columbia was planted to stolons grown from Professor Piper's No. 1 selection and has proved very resistant to brown-patch ever since. This strain has also produced a satisfactory turf at the Arlington Turf Gardens, but has been rather susceptible to the fungus; in fact, much more so than at Columbia, and decidedly more so than either the Washington or Metropolitan strain at Arlington.

The square foot of turf received from Professor Piper was shredded and planted in September, 1922, in nursery rows 3 feet

apart to a total of about 80 linear feet. The ground selected was the old No. 15 green of the Homestead course at Hot Springs, Va. The soil was poor, as the green had been skinned of turf and most of its topsoil several years previous when the site was changed. The only additional humus the stolons received was contained in the topdressing, and no fertilizer was applied until March, 1923, when a very light application of sand and nitrate of soda was given. However, by June of that year the stolons had matted together and the whole bed was taken up, shredded, and replanted to nursery rows, which this time occupied nearly half the area of the old green. Again the only additional humus material consisted of the topdressing with a light application of nitrate of soda two or three weeks later. In 1924 we began to use ammonium sulfate, though very sparingly. Occasional weeding kept the nursery fairly free

of undesirables and, though in the press of other work the bent garden was neglected like the proverbial stepchild, it grew and flourished, and in the summer of 1925 provided an abundance of stolons for planting the new No. 15 green when it was again resited.

In the construction of this green certain conclusions, drawn from recent experiences, were put in practice. For instance, it was noted that the most heavily manured greens at Cascades, just completed near by, were beginning to show evidences of brown-patch, particularly those whose subsoil was a stiff, impervious clay; whereas greens in which a minimum amount of manure had been used were practically free from the fungus. Another feature peculiar to the former type of green was the broad, lush leaf and thick ligule of the creepers, while on the latter the turf was of a much finer texture.

The rapid development of the nursery on comparatively poor soil and short rations, together with its absolute freedom from brown-patch, urged the writer to construct the new No. 15 of the

Homestead course with the minimum amount of manure (about 8 cubic yards to 8,100 square feet of surface) and the maximum amount of a naturally rich topsoil and clean, sharp sand. The subsoil was a light, pervious clay screened to a depth of 6 inches and carefully surfaced to conform to the finished surface of the green. Light topdressings of equal parts of screened sand and topsoil with 3 to 5 pounds of ammonium sulfate were applied at intervals of two weeks after growth had been established. The green surface was kept moist throughout the initial growing period. Close cutting was the rule at all times.

No. 15 is perhaps the finest green of the 45 at Hot Springs, and at no time since 1922 has the turf with which it was planted shown the slightest trace of brown-patch, despite the fact that the fungus has been quite prevalent near by, even attacking the bluegrass in certain areas. The turf is a rich, bright green in color, fine-leaved and slim of ligule, a hardy and truly patrician type of creeping bent, providing a putting surface of the utmost desirability. Within the limits of the writer's knowledge, no preventive measure of any sort has been used to protect it against brown-patch.

The conclusions drawn from the apparent immunity of this turf to the inroads of the mycelium are: First, that it was derived from stock showing a peculiar resistance to brown-patch; second, that it was propagated under soil conditions unfavorable to the production of the fungus; third, that in so far as was practicable these conditions were reproduced and perpetuated in the construction of the present No. 15 green. Finally, however, the instance in which it proved susceptible at Arlington nullifies any broad general claim to possible immunity and accentuates the probability of the local nature of the case. Unnumbered combinations of soil and climatic conditions and specific local influences operate to form in each a more or less separate and individual problem; so that it is perhaps more localized than general. Hence it behooves each club to seek and determine the strain best adapted to its peculiar conditions and to propagate that strain in its own nursery. An ample turf garden should be regarded as the most important adjunct of every well-managed golf course.

Only an exhaustive study and analysis of the whole matter can determine the underlying truths, and it is hoped that the Research

Committee of the Green Section, to whom the writer is indebted for the preliminary data on this turf, will undertake the solution. Few elements of research are of more fundamental importance to the golf world; for though substantial progress has been made in the treatment and control of brown-patch, it comes like a thief in the night to despoil and discourage the best efforts of the green keeper.

Golf Course Architecture and Construction

Selecting the Property

By William S. Flynn

The selection of the property for a golf course is a most important matter. Often the question is asked how much ground is needed for an 18-hole layout and what type of terrain makes the best course. There is really no specific rule as to the total acreage required. Eighteen-hole courses have been laid out on as few as 80 acres or even less, while others have taken as much as 200 acres, and in some instances more have been utilized to advantage. The necessary acreage depends primarily on the availability of the property for golf-course purposes.

In hilly country a great deal more ground is usually required than in gently undulating or more or less flat country. This is due to the fact that it is imperative to make the climbs easy, using the steeper slopes for downhill play and the lesser grades for uphill play wherever possible.

It naturally follows that in planning a course along these lines considerable ground must be wasted, as in very hilly country there are sure to be slopes so precipitous they can not be worked in at all.

When a portion of the property to be had is low, and it is hard to find a piece of land large enough for a golf course that has no low-lying sections, intricate drainage problems are presented, and it is sometimes wiser to pass up the swampy areas entirely and use other and higher ground that can be put in playing shape at a much lower cost of construction and afterwards maintained more economically. This also would have a bearing on total acreage requirements.

While fine golf courses have been laid out over all kinds of country, hilly, flat, and gently undulating, the latter type is, generally speaking, the best suited for the design and construction of a really good course.

After all, the science of golf architecture is the presenting of problems and the placing of objectives to be reached by the players and an objective that is 10 feet above or below him is practically as formidable as one 30 feet above or below.

And the great mass of average players, the men who support the game, must be considered, because it is more or less of a hardship for them to tramp, month in and month out, over severely undulating country. For, after all is said and done, most everybody who plays the game does so for the pleasure they get out of it, not for the exercise, no matter how loudly they may emphasize the lure of its health-producing qualities.

Then in gently undulating country much better visibility can usually be obtained, and visibility is much to be desired, particularly on the shot to the green. Also the maintenance problems are, as a rule, more simple on this kind of terrain.

In really hilly country the average construction and maintenance costs are higher than on other types of ground, because the cuts and fills required in building the tees, greens, and bunkers are much deeper, while hand labor enters into the maintenance to a greater degree.

Flat country, while uninteresting in itself, can be made attractive from the playing viewpoint by the use of artificial hazards and generous tree planting where necessary. But the cost of building these artificial hazards and the raising of tees and greens required by this type of land will make the price of the course, as a whole, rather expensive.

The selection by a golf club of the site for its future home means more than merely securing enough ground for an 18-hole course. As a matter of fact, it is a fatal blunder to pick out a property with just that one idea in view.

For the club wishing to have a comfortable course I would say that approximately 150 acres in gently undulating or flat country would be enough to take care of 18 holes and the attendant facilities, such as clubhouse, parking space, practice field, tennis courts, and so on.

But when a club is in a position to acquire more ground than is actually needed for the primal requirements it is always advisable to do so. For land values immediately advance in the section surrounding a new golf course. In fact, the price per acre starts to jump the moment it leaks out that the course is to be constructed. And there is no reason why the club should not reap some of this harvest, as it is the real cause of the enhancement.

It is also necessary for the officers and directors of a newly organized club to consider the future very carefully before purchasing ground for a course. What are the prospects for ultimate growth? Is the club likely to be successful and expand until one 18-hole links will be entirely too small? These and other questions must be asked and answered before final decision is made.

For a great many clubs struggled along through a trying period of infancy striving desperately to make both ends meet because of an unfilled membership roll and then suddenly found themselves overwhelmed with applications for membership as the popularity of the game of golf increased, as it did, by leaps and bounds during the period just before and just after the World War.

It is obvious that the club having only a small acreage can not expand sufficiently to meet such a situation and is forced either to seek other quarters or else goes to pieces with the more progressive element breaking away and forming a new club.

If the original organizers had looked far enough ahead and had secured sufficient ground so that when the time came to expand 9 or 18 more holes could have been added a great deal of inconvenience and expense would have been avoided.

Then there are many instances of clubs that when built were counted on to stay put for a lifetime but which have been crowded out of existence in the short space of 10 or 15 years by building operations creeping up on either hand and eventually swallowing them.

While a situation of this kind is hard to control, yet had sufficient ground been purchased in the beginning the course could have been

laid out in such a way as to leave plenty of room between the fairways and the boundary lines, with the area between planted with trees and shrubbery so as to exclude the links from the encroachments of the building contractor.

While it is not generally considered good practice for golf clubs to go into the real estate business, it is often possible for a club to earn the price of its entire plant by purchasing enough additional property outside the limits of the links at a reasonable figure before it is known that a course is to be built in that particular section, and later selling it to members or to carefully selected homeseekers at the current market price, and applying the profits to the cost of construction.

This type of operation is accomplished more readily when the property held for sale abuts on established roads which would save the club the great expense of building them. Such a situation, however, is unusual, and is not to be found every day.

When the roads touching the property are few and in bad condition it would be wiser to turn the development of the building sites over to a reliable real estate concern, perhaps that of a club member, paying a regular commission for handling and disposing of the land. The real estate man should know the pulse of the public, and the building committee of the club is relieved of responsibility in a matter of which their knowledge is vague.

The realtor, however, should be under the direct control of the committee, which should pass on the architecture of the houses to be erected and approve the prospective home owners as being desirable additions to the little colony clustering around the golf course.

Another plan that has proved feasible in some instances is for the club to sell the excess property outright to a concern making a specialty of real estate developments, under proper restrictions, of course, as to type of architecture and the personality of prospective purchasers.

There are other reasons for having ample acreage over which to spread a golf course besides those cited above. One is congestion, and that is a bothersome problem at all clubs, and the other is the actual danger involved in having fairways too close to each other.

Nothing is more irritating than to be at the top of your swing on an important shot and suddenly to hear a call of "Fore" and to have a ball, hooked or sliced from an adjoining fairway, whiz by your head. Naturally you are disconcerted by such an incident, and the feeling of insecurity continues during the rest of the round and, most probably, every time you play the course in the future.

A course that is jammed into a limited space is apt to be uninteresting anyhow, and the feeling of being crowded on top of each other, so to speak, is very annoying to the players. Take, for instance, a layout where there are boundary stakes marking the dividing line between the fairways. This always makes the members sore. A penalty stroke for out of bounds on even a slight hook or slice and yet the ball is still on the club property. It would be better to plant trees and shrubbery, if the evil can not be corrected by revising the course, and so eliminate the imaginary boundary lines.

The instances cited are given merely to show what to avoid in selecting property for a golf course. Look ahead, secure sufficient

ground, give your players plenty of elbow room. A building committee acting thus wisely will receive the everlasting gratitude of their fellow members.

Any competent architect should be able to determine after inspection whether a certain property is suitable for a golf course, whether there will be plenty of space and whether the average member will enjoy playing the course once it has been completed.

The pleasantest type of course is one where the holes are segregated, that is where the hole you happen to be playing is well apart from the others. In order to have this kind of course it is necessary to secure property that is already wooded or to do considerable planting of trees.

The old idea was to have golf courses as free from trees as possible. This notion, no doubt, was imported from Scotland because when golf was first taken up in the United States we knew very little about the game and modelled our courses on those of the Scotch which were, for the most part, built along the seashore where there were no trees.

It is impossible to conceive that the "Canny Scots" would have denuded their courses of trees if there had been any there originally. As a race they are entirely too thrifty for any such waste as that.

Today the old ideas have been discarded and the prevailing belief is that trees, most emphatically, have a fixed place on a golf course. This is true for many reasons:

First—Because there are few, if any, sites available that are devoid of trees and it is a costly operation to cut them down and remove them.

Second—Trees add beauty to a course forming picturesque backgrounds and delightful vistas.

Third—Their shade is most refreshing on a hot summer day.

Fourth—They are of great practical value in segregating the various holes.

While the character of the course the club wishes to build should weigh most heavily in determining the kind of property to purchase, yet due consideration should also be given to the question of a site for a clubhouse.

There is much enjoyment in sitting on a broad veranda, overlooking the course and consuming a twilight meal while incidentally discussing the high spots of the round just completed.

In many clubs there are members who do not play golf to any great extent, but who enjoy the comforts of a commodious and well equipped clubhouse situated on some hill or plateau giving a fine view of the links. Such men are valuable assets to every club, and when the clubhouse location is attractive and the building itself architecturally pleasing there is something to offer this type of member.

Water is a very important factor to be considered in selecting a site for a golf course. Any club that buys a piece of property without an adequate water supply from creeks or springs is at a distinct disadvantage and especially so when no public service water connection is to be had.

The absence of creeks or springs necessitates the drilling of wells which often proves an unexpectedly expensive proposition. Time

after time the estimated depth of a producing well has turned out to be far short of the actual depth and the deeper the contractors have to bore the higher the cost of the operation.

On the average 18-hole golf course the maximum amount of water for the watering of tees, greens and fairways should be approximately three hundred gallons per minute. On properties where there are creeks or springs it is easy to determine how much water is available by using a weir and thus calculating the flow exactly.

If the flow is less than 300 gallons per minute it is then necessary to build a reservoir and impound sufficient gallonage to take care of the stated maximum. But a reservoir, even counting the cost of the dam, pump and piping, is cheaper in the long run than drilling wells or buying from a private water company.

Finally one of the most important points in selecting a golf property is to secure a self-contained acreage without interrupting public highways.

Nothing tends to detract from the pleasure of the game more than the necessity of having to cross a highway, particularly where there is a constant flow of traffic, even though the crossing is between green and tee and not in the actual play.

Instances may be cited where this or that well known club with its so called championship layout has roads that must be crossed in the course of a round. Yes, but why perpetuate an error?

The Most Important Summer Work on the Golf Course

By R. A. Oakley and O. B. Fitts

As the responsibility for the upkeep of a golf course usually rests on the shoulders of both the chairman of the green committee and the greenkeeper it is very important that these men should understand each other and that they should both familiarize themselves with all the phases of the work involved in golf course maintenance to the extent that they appreciate the relative importance of the various phases of the work to be done at different times of the year.

Next it is important that the greenkeeper be supplied with sufficient labor and equipment to carry on the work properly and that he has his force so organized that the important jobs can be given the attention they need at the proper time.

During most of the active playing season the greens require more careful and constant care than any other part of the course, or, in fact, all other parts of the course combined. For courses having essentially the same conditions as those obtaining in the general latitude of Washington, and this means most of the northern courses, the summer is the time of the year when greens must not be neglected. Fairways or rough or bunkers may be slighted if it is actually necessary to slight them, and usually they will not show the evidence of neglect for any considerable length of time after good treatment is renewed; but neglect of the greens is not as easily corrected.

It is rarely the case nowadays that a club is over-supplied with labor. Competent laborers are far from plentiful. Therefore the problem is to use the available ones where they will do the most good. It too frequently happens that groups of men are put at work cutting

weeds in unimportant places or making repairs here and there—in short, polishing up the course—when every available man should be pulling crab grass out of the greens or treating the greens with chemicals for the prevention or cure of brown-patch, or some other important piece of work that, if neglected, is apt to result in inestimable damage to the greens and loss of time and money later. This is poor management indeed.

It is scarcely possible to pick out one piece of work as being of the greatest importance, but nearly all will agree that there is a group of things that should be done in the summer even to the neglect of all other work on the course.

In most parts of the North the greens are the first daily consideration at this time of the year. The order of importance of the work that should be done on them is about as follows: Mowing, watering, weeding (particularly removing crab grass), topdressing with good compost when needed, and applying chemicals to prevent or check the brown-patch disease when this is necessary. If these things are done properly and when they should be done there will, as a rule, be time enough to care for the fairways and the rough.

Mowing.—While there is much difference of opinion regarding the height at which putting greens should be cut during the summer months, particularly in hot weather, the game requires that they be kept with an even surface. This virtually means cutting every day. To those who have observed greens closely in this latitude it is clearly evident that if the best possible turf is to be maintained they must not only be cut practically every day but they must be cut closely. This applies especially to vegetatively planted bent greens. A considerable period of observation and study has resulted in this conclusion. Cut bent greens every day during the summer and cut them closely, removing the clippings. See that the mower is well adjusted at all times.

Watering.—As in the case of mowing, there are differences of opinion with regard to watering. Some—in fact, many—contend that greens should not be watered during periods of hot, bright sunshine. It is very doubtful if there is any real evidence in support of this contention. Summer showers frequently occur on hot days and are followed by bright sunshine. This is the rule rather than the exception.

During the past four or five years the United States Golf Association Green Section, in cooperation with the Department of Agriculture, has conducted a number of experiments in the time of applying water and the rate of its application, and from the results of these experiments to date we have seen no indication that watering during midday is injurious to turf in the least. Taking these experiments and experience into account, the matter of watering shapes up about as follows: Water the greens when they need it, preferably early in the morning when it can be done without interfering with play, otherwise water when the work will be of least inconvenience to the players, but in any event water the putting greens liberally and let the appearance of the turf be your guide as to when to water and the quantity of water to apply.

As far as the relation of watering the greens to the brown-patch disease is concerned, no evidence has been produced that turf which

receives proper watering is any more susceptible to brown-patch than turf which is neglected in this respect. On the other hand, there has been evidence that early morning watering has a tendency to lessen the injury from an attack of large brown-patch, and it is for this reason that watering early in the morning was suggested above. Watering the greens apparently has no relation whatever to the small brown-patch.

Weeding.—Outside of controlling weeds by the use of fertilizers, there is only one satisfactory way so far known for keeping them out of putting greens. That way is hand-weeding. The important weed to fight in the latitude of Washington at this time is crab grass. Do no waste time cutting or pulling weeds out of the fairway, the rough, or the bunkers when crab grass is in evidence on the greens. Do not let anyone tell you that the time to eradicate crab grass is after it has started to branch. The time to pick crab grass is when it first becomes evident, and it becomes evident when it is in the very early seedling stage. One man can remove more crab grass plants in this stage than can three men after the plants have started to branch. Water the greens just before starting to pick crab grass. The young plants pull out more easily when the ground is wet than when it is hard. If you have anything like a full gang of men on your course, do not listen to the contention that if the crab grass plants are allowed to grow to a good size they can be removed by means of a special rake. True, you can get a lot of them this way and with relatively little labor, but there is a very great percentage that you can not remove; and besides, the severe raking necessary to get even a fair percentage of the crab grass plants proves detrimental to the turf grasses in this vicinity. It will probably do so elsewhere. Crab grass has ruined more greens in this latitude than all other weeds combined, and it has done so largely because it has not been removed in the early stages of its growth. Get the crab grass while it is in the harmless stage. It will not remain in this stage long.

Weeds may be controlled to a great extent by consistent fertilization with such acid-reacting fertilizers as ammonium sulfate or ammonium phosphate. In the experimental turf plots at Arlington where a series of plots have been treated with various fertilizers once a month during the growing season since 1921 there has been very striking evidence of the tendency of acid-reacting fertilizers toward keeping the turf free from crab grass, clover, and numerous other weeds, as well as showing a tendency to discourage earthworms.

Topdressing.—For the production and maintenance of fine turf, good compost evenly applied as a topdressing is a prime necessity. It looks as though the application of good compost comes in a class with mowing and watering in the summer treatment of putting greens. Heavy applications at this time are rarely desirable, but frequent light applications of a cubic yard or less per 5,000 square feet help the turf wonderfully throughout the summer months. The benefits from the use of compost as a topdressing are very generally recognized, but there are too few that appreciate the advantages of topdressing greens during the summer. A good compost may be made from one-third clay loam, one-third well-decomposed manure

or mushroom soil, and one-third sand. These ingredients should be thoroughly mixed and well screened. If compost as good as this is not available, use the best that materials at hand will afford. To compost may well be added some sulfate of ammonia, approximately 1½ to 2 pounds per 1,000 square feet of turf for summer treatment, or about double this quantity for spring and fall applications. Top-dressing with compost gives the grass a new lease on life, and besides it seems to be an exceedingly helpful treatment in the relief of brown-patch.

Treating the greens with chemicals to prevent or check brown-patch.—During the summer months, in the latitude of Washington and St. Louis as well as in numerous other regions north of this latitude, putting greens are apt to be attacked by the brown-patch disease of turf, which, if neglected, may in a very short time practically destroy a beautiful putting green. In regions where the greens are subject to frequent attacks of brown-patch during the summer season it is advisable to use precautionary measures, as well as to be on the constant lookout for the appearance of the disease and prepared to combat it at its first appearance.

A simple treatment which has recently been found to be very effective in the control of this disease is the application of calomel (mercurous chloride), using one-fifth of a pound to treat 1,000 square feet of green. This may be applied in the form of a spray or it may be used mixed with a small quantity of finely screened soil or sand. In either case it should be uniformly distributed over the surface of the green and then thoroughly watered in. It may be necessary to repeat this treatment several times during the season in order to obtain complete control of the disease, but even so it is a very practical treatment. In case calomel is to be used as a spray, it is important that the spraying apparatus be equipped with an agitator in order to keep the material in suspension in the water at all times, as the calomel will not dissolve. Fifty to 75 gallons of water is sufficient for any ordinary putting green, and the quantity of calomel necessary at the rate suggested above should be weighed and placed in a barrel or tank while it is being filled with water. Then the agitator should be allowed to work for a sufficient length of time to get the calomel thoroughly distributed in the tank before the nozzles are opened.

There are a great many things that must be done on the golf course during the summer in addition to the ones mentioned here. Fairways must be mowed, the rough must be cut occasionally, bunkers must be raked and mowed, and other things almost without end; but do not forget that the greens are passing through the critical time of the year, and for them the important items of treatment and care must not be neglected.

A Green Section meeting will be held in Washington on Monday, August 29. Visitors will be guests of the Green Section for the day. Headquarters will be at the Hotel Hamilton, 14th and K Sts., N. W. To complete the program as scheduled it will be necessary to leave the hotel for Arlington promptly at 9 a. m. Be sure to tell us that you are coming.

AMATEUR GOLF CHAMPIONSHIP

The thirty-first competition for the Amateur Golf Championship of the United States, will be played on the course of the Minikahda Club, Minneapolis, Minnesota, beginning Monday, August 22, when the Havemeyer Cup and four medals will be competed for under the Rules of the United States Golf Association.

The winner of the competition will be the Champion Amateur Golfer for the year, and the cup will be held for that year by the club from which the winner shall have entered.

The Winner shall receive.....A Gold Medal
The Runner-up shall receive.....A Silver Medal
The other Semi-Finalists shall receive.....Bronze Medals

The player making the lowest score in the 36-hole qualification round will receive a special prize.

The conditions of play for the Amateur Championship will be as follows:

MONDAY, August 22—First Qualification Round. Eighteen holes to be played by each contestant.

TUESDAY, August 23—Second Qualification Round. Eighteen holes to be played by each contestant; the thirty-two players having the best scores for the 36 holes of the first and second qualification rounds to qualify for match play. Draw to be seeded.

WEDNESDAY, A. M., August 24—Eighteen hole match play round—1st round.
WEDNESDAY, P. M., August 24—Eighteen hole match play round—2nd round.
THURSDAY, August 25—Thirty-six hole match play rounds—3rd round.
FRIDAY, August 26—Thirty-six hole semi-finals.
SATURDAY, August 27—Thirty-six hole finals.

In the event of a tie or ties for the 32nd place on Tuesday, the contestants so tied shall continue to play until a lead by strokes at any hole has been gained.

In drawing for match play rounds, the draw will be seeded from a ranking list to be prepared by the Committee, ranking the leading twenty players. The first eight names on such ranking list will be seeded in the draw.

In the event of a halved match, the players shall continue to play until one of them shall have won a hole which shall determine the winner of the match.

All entries are subject to the approval of the Executive Committee of this Association, and any entry may be rejected by the Committee. All disputes shall be settled by the Executive Committee of this Association, whose decision shall be final.

Any player who fails to appear promptly at the first tee when his name is called by the Committee shall be disqualified unless reasons satisfactory to the officials in charge of the Tournament be given.

Any person paying his entrance money shall be considered thereby to have submitted himself to the rules of the Association both as to restrictions enjoined and penalties imposed. On these conditions alone he is entitled to enjoy all the privileges and advantages of the Association Competition.

All score cards in the Medal Play Round must be kept in strict accordance with "Rule 5, Special Rules for Stroke Competitions." Competitors failing to comply with the requirements of this Rule will be disqualified.

The privileges of the Club House and the Grounds are extended to all competitors in the Championship for one week previous to the Tournament.

The pairings and starting times for the Qualification Rounds will be announced through the press, and will be the same for Monday and Tuesday, August 22nd and 23rd.

The pairings and starting times for the Qualification Round on Monday, August 22nd, will be announced through the press and posted in the Club House. On Tuesday, August 23rd, the starting times will be reversed.

Entries will be received from players who have qualified for the Match Play Rounds of the Amateur Championship in any of the past three years. Any other Amateur Golfer, who belongs to a member club of the United States Golf Association, and has a handicap rating of three or less, based on the Calkins Handicap System, may submit his entry, together with a statement of his competitive record for the past two years to the Championship Committee on or before July 30, 1927. The ability of all such entrants will be investigated and the player notified as to his acceptance or refusal at least two weeks prior to the Championship. Positively no entry will be so considered which is not in the hands of the Championship Committee on or before the above mentioned date.

UNITED STATES GOLF ASSOCIATION
CHAMPIONSHIP COMMITTEE

H. H. Ramsay, Chairman,

110 East 42nd Street, New York City.

Does your greenkeeper get THE BULLETIN? If not, see that his name is on the mailing list. He is the man who needs assistance. Any member club may obtain any number of additional subscriptions for THE BULLETIN, for use in connection with the work of its own club only, for $4 per year.

All attempts to use hazards for the sake of penalty alone occasion a duplication of bunkers and the reduction of golf to trench warfare.

QUESTIONS AND ANSWERS

All questions sent to the Green Section will be answered in a letter to the writer as promptly as possible. The more interesting of these questions, with concise answers, will appear in this column each month. If your experience leads you to disagree with any answer given in this column, it is your privilege and duty to write to the Green Section.

While most of the answers are of general application, please bear in mind that each recommendation is intended specifically for the locality designated at the end of the question.

1. Exterminating dandelions.—Will you kindly advise us what is the best way to handle the dandelion problem? (Wisconsin.)

ANSWER.—Perhaps the best method of handling dandelions on putting greens is to impregnate the crown of the plant with sulfuric acid. This is done with an ice pick. Dip the point of the pick in the acid and stick it into the crown of the plant. This kills the plant, and if done carefully will do no injury to the grass. The acid should be carried in a small, flat-bottom bottle, securely held in its place in a wooden box. If the bottle is tipped over, any acid that is spilt will kill the grass it touches; it will also eat through clothing or take the skin off the hands of the workmen if great care is not used.

2. Tees; architecture of and grasses for.—Will you kindly advise us what grass seed is preferable for tees? Many of our tees are elevated, and it would seem that a different kind of grass would be desirable for an elevated tee than for one built right on the ground. (New Jersey.)

ANSWER.—The best tees are those that are on the ground level and are relatively large in area. On the ground level turf is much more easily maintained than on a raised platform; besides, if the area is large the tee plates can then be moved frequently, every day if desired, and thus injury to the turf in spots will be prevented. Elevated tees are never warranted except for securing visibility; and even in that case they should be pretty large and an attempt made to construct them of such a form that they fit in with the landscape. Square tees are an eyesore on any golf course. In your latitude bluegrass is the best basis for a tee. More or less white clover will of course invade it, and we consider it desirable to have some bent mixed with the bluegrass. If you already have bluegrass tees you can get the bent in the tees by seeding and topdressing them in early fall, as bent is fairly aggressive when sown on other grasses. On elevated tees it is more difficult to maintain turf, as the fluctuations in the moisture conditions of the soil are much greater than on the ground level. Of course, the larger the tee the better are the conditions for growing turf on elevated ground, but it is difficult to maintain turf on small elevated tees.

3. Tobacco dust and charcoal for ridding turf of ants and worms.—It has been represented to us that tobacco dust used as a topdressing will rid a putting green of ants, also that pulverized charcoal if used in the same way about once a year will rid a green of worms. Do you know of any detailed experiments that have been made along these lines? (Indiana.)

ANSWER.—We have conducted experiments with tobacco dust and charcoal but have never noticed any particular benefit from their use in the way of ridding turf of ants or worms.

4. Controlling chickweed.—I am sending you a sample of a weed which seems to be taking our greens. It spreads very fast. Some of the greens have as high as 200 patches of this weed from 1½ inch to 1 foot in diameter. What is the weed and how shall we control it? (Nebraska.)

ANSWER.—Your weed is the common chickweed. The best way to get rid of it is to burn it with ammonium sulfate or ammonium phosphate. Have a man take a bag of the chemical and go over the greens and sprinkle a small quantity on each patch, letting it stand for one day, and then follow this with a thorough watering to wash the chemical down into the soil. Some of the grass will be burned by this treatment, but the damage to the grass will be only temporary. These chemicals, aside from their fertilizing value, will with continued use as a fertilizer get the soil into a condition so acid that the chickweed will no longer invade the greens, while the growth of the grass will be improved.

5. Weeds in bent greens; necessity for their prompt removal.—We have five bent greens coming along nicely but they have a great many weeds from the manure we used in building them. We have been weeding these out, but are wondering whether there would be any danger in our letting them go, expecting that cutting and the growing bent will crowd them out. (Ohio.)

ANSWER.—We would advise you by all means to keep your greens thoroughly weeded. The growing bent will not crowd all of them out. Cutting will prevent a few kinds of weeds from producing seed, but even in the presence of such weeds the bent can not make its best growth. There is great danger of the weeds going to seed at any time and causing endless trouble.

6. Use of salt for killing weeds in bunkers.—Could you give me any information with regard to killing weeds in bunkers? We have a power sprayer. (Oregon.)

ANSWER.—Probably the most convenient and effective preparation for killing most kinds of weeds is common salt. If applied dry, 30 to 50 pounds per 1,000 square feet should be used. If applied in solution, make the solution as strong as possible, using about 3½ pounds to a gallon of water, and apply with a sprinkler or sprayer at the rate of 6 to 9 gallons per 1,000 square feet.

7. Possible injurious after-effects from use of corrosive sublimate as a worm exterminator.—Kindly give me your opinion on corrosive sublimate for the eradication of worms in putting greens, both as to its efficiency as an exterminator and its effects, if any, upon the turf. I have heard that this chemical is injurious to turf. (Michigan.)

ANSWER.—In our experience corrosive sublimate is the best of all of the worm eradicators, the best from the standpoint of getting the largest number of worms and also because of its cheapness. It does not injure the turf unless used in excessive quantities, and there are no deleterious after-effects.

July and August are the months when browned areas are especially common on greens. Entire greens with a browned and unthrifty appearance are by no means unusual.

Browning of turf may be due to one or more of many causes, among them are:

Brown-patch disease.
Insufficient water.
Unfavorable soil conditions.
Poisons in the soil
Burns with chemicals.
Starvation—especially shortage of nitrogen.

Greenkeepers frequently fail to distinguish the various types of browning. Due to the publicity brown-patch has received in recent years, it is frequently taken for granted that all browned turf is "brown-patch."

The safest and most effective treatment so far known for brown-patch consists of an application of some mixture containing mercury. Mercury is an expensive chemical and all compounds containing it are relatively costly.

It is well to know whether brown-patch actually is responsible for the unthrifty appearance of turf before going to the expense of an indiscriminate application of some expensive mercury preparation. See THE BULLETIN, June, 1926.

Frequently we find a greenkeeper wasting some mercury compound on a browned green where all that is needed is a little more water each day.

Likewise these compounds are frequently wasted in attempting to check some browning which is due solely to some unfavorable soil condition or to poisons (copper for instance) collected in the soil. No amount of mercury will correct such conditions. Yet the greenkeeper who attempts it will usually be quick to express his opinion as to the ineffectiveness of these fungicides against "brown-patch."

Applications of mercury fungicides for brown-patch control are usually accompanied or followed with some fertilizer. This is a wise practice on greens that need fertilizer.

But don't be fooled! We have seen greens when the combination treatment of mercury compound and fertilizer (either home mixed or a much more expensive commercial mixture) have been applied with apparently remarkable results. In some cases the fertilizer alone would have given practically the same improvement for the greens were badly in need of nitrogen. In other cases a very small amount of the mercury compound would have been sufficient to check the slight attack of brown-patch and the fertilizer would do the rest.

Where you have browning due to brown-patch don't hesitate to use some mercury fungicide; but where the browning is due to some other cause, don't waste your money on these expensive chemicals.