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THE GOLF COURSE

A MONTHLY BULLETIN DEVOTED TO THE DIS-
CUSSION OF MODERN METHODS AS APPLIED
TO GOLF COURSE CONSTRUCTION AND UPKEEP

A Plea for More Holes Between 400 and 480 Yards, and Fewer of Over 500

By WILFRED E. REID

SOONER or later, if I am not mistaken, holes of more than 500 yards in length will gradually disappear. The demand for length is not in this direction. What is required are more holes ranging in length from 395 or 400 to 480 or so; or, to put it plainly, better two-shot holes, and not "mongrel" holes of over 500 yards, where three strokes of any kind will do, yet no two shots will get there (occasionally this may happen, I may add, but very seldom). Standing on the tee of a hole a few weeks ago, where the length was something like 530-odd yards, two out of three of my opponents made remarks to the effect, "anybody's hole; we can't get home in two, anybody's home in three," and this happened exactly, for I half missed my second, played a moderate third to the edge of the green, and luckily sunk my putt—some four! The other three players each played fine drives, equally good seconds to within fifty yards of

the green, good approaches—good fives, all. Now, surely something is wrong with this type of hole. Therein lies a trouble to-day, providing much "food for thought," considerable study, and the modern golf course architect should be fully alive to it, for, I repeat again, we have not enough good holes between 400 and 480 yards.

Very few so-called three-shot holes are ever *three shots*. Holes of this type usually range from 500 to 550 yards or so, and provide too many loop-holes. Any one of three strokes may be topped, whether it be the tee shot, second or third, and the player will have a "fifty-fifty" chance of getting a "five par," also a half with an opponent who may have played three faultless strokes from tee to putting green, and who cannot do better than a "five par." Honestly, I cannot say this is as it should be. Holes of this length allow too many possibilities at the expense of the man who may have

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The GOLF COURSE

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R. O. SINCLAIRE, *Editor*

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IN the last issue of the "Golf Course" we expressed the hope that American courses would not be neglected during the war. We have been very much gratified by the manner in which the Green Committees have been keeping up the courses; the orders which we are receiving indicate this beyond a doubt. However, there is a very vital point to which we desire to call attention.

The railroads have found it necessary to reduce the number of trains, and shipping facilities are not so satisfactory as in times of peace. Thus far we have not been handicapped greatly but each week impresses upon us the necessity for anticipating shipments. As a rule the clubs order rather heavily during August for the Fall renovation work. If it so happens that the weather is unseasonable, a little delay is likely to prove disastrous. It is this thought which prompts us to suggest that Green Committees consider their full requirements and send their orders to us earlier

than usual in order that there may be no question of getting our shipments through without delay.

When the entry of this country into the war was followed by rash intimations that our courses might be used for farming, very few regarded the scheme seriously and today there exists only the desire to maintain the courses in spite of everything. A surprising amount of new work is progressing steadily and undoubtedly the Fall will see almost as much work as ever throughout the country. We see the handwriting on the wall and our only fear is that we may not be able to fill tardy orders promptly. This is our reason for suggesting your consideration of your requirements.

It is with great pleasure that we include in this issue of "The Golf Course" an article by Mr. Wilfred E. Reid. The topic he has chosen is certainly worthy careful study and in our opinion the views expressed are very sound. We sincerely trust that this will be only one of many articles by Mr. Reid to appear in "The Golf Course."

PROFESSIONALS and greenkeepers frequently request us to advise them where they can secure situations. We shall be glad to furnish the names of competent men.

More Two-Shot Holes

By THE OBSERVER

IT may seem that I have been devoting a great deal of thought and comment to the two-shot holes, but when we consider that most of them are of this type, it will be appreciated that the topic may not be passed over lightly. In modern golf courses we are likely to find four one-shot holes, two or three of the three-shot type, and the remainder two-shotters. Let us for a moment make some distribution which will lend great variety to the play.

Two-shot holes are divided into the following classes:

Long ones, providing for a drive and brasseys or a drive and cleek.

Medium holes, of the drive and long iron type.

Short holes, of two distinct types, a drive followed by a lofted approach or a drive followed by a run to the greens.

Assuming that we have a dozen two-shot holes for the modern course, a good arrangement provides four long ones, calling for two of the best shots which the hard hitter possesses. Such holes would average between 430 and 460 yards, according to conditions. Inasmuch as the second shots to these are long, the greens should not be too closely trapped, although the bunkering must place a premium upon placement.

Then four more two-shot holes of medium length more closely trapped, particularly in the vicinity of the greens, for the mid-iron should be played more accurately than brasseys or cleek.

This leaves four more two-shot holes and they may be divided equally, two

requiring a close mashie pitch with the greens closely and heavily bunkered, and the remaining two permitting a running approach to the hole with no obstructions, provided the drive has been accurately placed over an area which is well trapped.

It may be worth while to cast about for illustrations of the types which I have mentioned. A very fine example of the long two-shotter is to be found at Pine Valley. When I played there last I observed particularly the fourth hole. It is of the dog-leg variety and although there are traps to catch wayward shots, the way to the hole is not sprinkled with disaster provided one keeps long and straight. It is a hole where length counts, but not alone, for the two-shots fit together beautifully, and if the drive is not well hit and well placed the green is entirely beyond range.

A very fine example of the medium two-shotter is furnished by the 16th hole at Merion where the last national championship was played, and although the country boasts of many equally good, I use it as an illustration, because so many are familiar with it. The green lies just beyond the brink of a large quarry hole and after a good drive the scratch players have no difficulty in getting home with the long iron. The nature of the great hazard makes it almost impossible for one to get the green with his second if his drive has been anything but good, and it places the short player in a very awkward position; indeed it is a per-

plexing shot for a brassey if the drive is only two hundred yards.

The ninth hole at Garden City is a good example of the drive and mashie pitch. The green is not large and an immense sand pit in front makes it necessary to loft, and nothing but a ball with considerable under-cut will be satisfying. The character of the fairway makes it necessary to place the drive accurately on the left, otherwise the pronounced slope throws the ball

takes in the construction of greens for two-shot holes. It seems reasonable that any hole should always possess the value of its conception. The architect, in conceiving any hole, traps it with exact shots in mind. Under all conditions holes should demand exactly the same types of strokes, and consequently additional teeing grounds must be built in order to provide against abnormal conditions, such as head winds, or soggy ground, but the mistakes that I re-



WHEN THE GARDENER BUILT THE BUNKERS

far to the right, from which point the green is quite blind.

One of the best holes to illustrate a well placed drive and an open running approach to the green is the fifth at Shawnee. The green was built to show a rather pronounced slope from right to left, and if the drive is at the right of the fairway it is almost impossible to gain the green and hold it. But if the player has courage and hugs the boundary close on the left the green opens beautifully to a pitch and run.

I may say that I observe many mis-

ferred to are not infrequently encountered. I refer to the copying of putting greens and their surroundings and I think that a word will be sufficient. Although you may have observed an attractive green on another course it by no means follows that this same green would be satisfactory on a hole of a different type. How foolish it would be to copy a green which was designed to receive a second shot played with a brassey and introduce it on a hole which should be gained by a second shot played with jigger or mashie.

Nitrate of Soda

It's Origin

COMPARATIVELY few of us, except those who are interested scientifically or commercially, have any knowledge of the Chilian nitrate industry. Fewer still have any idea of the origin of the mineral "caliche," from which nitrate of soda is extracted; and yet the product is an almost indispensable commodity in agriculture and in many branches of commerce. It is only when we learn to what an extent it is used, more especially as a fertilizer and in the manufacture of explosives and glass, that we realize what an important factor it is to the world at large.

At present the entire supply of nitrate of soda comes from Chili, and, as far as is known, there are no other deposits elsewhere, or at least none which can be profitably dealt with.

This will be more readily understood when we become aware of the fact that nitrate of soda is very soluble, and that the raw material, or caliche, even draws water from the atmosphere and is dissolved. It can only be found accumulated, therefore, in rainless localities, and as only traces have ever been discovered in any of the deserts at present explored, it is only reasonable to suppose that no other such deposits are in existence.

The caliche deposits in Chili lie between the coast range and the Cordilleras or Andes, at a height of from 3,000 to 5,000 feet above sea level, in a rainless desert absolutely devoid of vegetation, and the question naturally arises as to how they could have originated.

Among the many more or less con-

flicting opinions, the one that has been longest accepted appears to be that these vast beds of salts were created by the evaporation of sea water in basins, which in prehistoric times formed inland seas, eventually cut off from the sea by volcanic eruptions; and that the mineral deposit originated from decayed vegetation (seaweed) and animal matter (fish, etc.), the nitrogen of which, by a process of nitrification, has been left in combination with the soda derived from the salts of the sea. This theory is strengthened by the fact that skeletons of animals, birds and fishes, together with guano, are often found under the caliche, and also that iodine is almost invariably present. We know that sea plants contain iodine—often to a large extent—but we do not know of any animal bodies or excrements which contain it; so that the mere fact of the caliche being rich in iodine gives ground for supposing that sea plants, in their decomposed state, had a large share in the formation of the nitrate beds. It is difficult, however, on this hypothesis, to account for the absence of bromide. A later theory which is influentially supported is that the deposits are largely the residue of accumulated land drainage brought down through ages from the high lands lying behind the coast.

The next step is to consider the conditions under which the caliche is extracted or mined; for it must be clearly understood that this is not a mere "surface proposition."

Speaking generally, the surface for a depth of some inches is covered with a

layer of fine loose sand, and under this sand is found a layer of certain mineral matter cemented into a compact mass, varying in thickness from one to several feet. This is called the "costra" or crust.

Below this layer is often found another layer known as "congeló," which, as its name implies, is a congested mass of sand, salt and stones with traces of nitrate.

Finally is found the caliche, and we can therefore realize that the expression "mining" may well be used in connection with the obtaining of the raw material.

The first operation, for the purpose of getting out the caliche, is to remove the various layers of soil and matter described above, and this is done by blasting. A hole or small shaft is bored from the surface right through to the natural bed on which the caliche rests, this shaft being then continued below the material to be blown up, and a space scooped out at the bottom. A charge of powder is then well packed into this chamber and the blast hole filled up with loose sand, etc., and then the powder is exploded by means of a fuse. This powder is manufactured at the oficinas, or factories, from the nitrate obtained there. The blasting over, the caliche is picked out and broken up into blocks of a convenient size, and transported either by rail or mule cart to the oficina.

EXTRACTING THE NITRATE OF SODA

We now come to the extraction of the nitrate of soda from the caliche, and the first process is the crushing. This is performed by machinery, by which

the caliche is crushed and dropped into cars, which in their turn carry it on to the boiling tanks. These boiling tanks are heated by means of steam pipes and serve to dissolve all the soluble components of the caliche, separating the foreign salts from the solution later on by means of crystallization.

The hot solution flows through canals to iron crystallizing pans of varying sizes, and the liquid which is left after the crystallization is drawn off and pumped up to the iodine house and the iodine extracted therefrom, after which it returns to the boiling tanks and is subsequently used in the evaporation of nitrate. When this mother liquor has run off the crystallized nitrate goes through various drying processes for some four or five days, and finally comes into the cancha, or drying floor, where it remains until it is sufficiently dry for packing in bags, containing about 200 pounds, and it is then conveyed by rail to the coast and exported.

Having discussed the supposed origin of the deposits and described shortly the method of the extraction and manufacture of nitrate of soda, it may be as well to give some idea of the estimated length of life of the nitrate grounds.

In view of the various conflicting rumors on the subject, Señor Alejandro Bertrand, civil and mining engineer, formerly Director of Public Works in Chili, and now the Chilean Government's inspector of nitrate propaganda in Europe, made an exhaustive official report to his government in June, 1908.

The greatest pains were taken in the compilation of this report, and there can be little doubt, after a careful perusal of it, that we may rely on a *minimum*

stock of some 220,000,000 tons at the present time. Moreover, as large districts in the nitrate region have not yet been explored, it is probable that the fields known to this day are only a part of those existing in Chili, and it is therefore certain that these figures will be very largely added to.

Again, no account is taken of the many millions of tons of ripio or dumps accumulated at the various oficinas, the greater part of which will undoubtedly be worked at a profit in the future, so that we must not consider only the 220,000,000 of tons in estimating the life of the fields. The exports for 1908 amounted to over 2,000,000 tons, and allowing for a moderate increase each

year it will be safe to estimate a life of 100 years at least for those fields already explored—a most conservative estimate indeed, seeing that this term may well be indefinitely increased by the discovery of new beds in the hitherto unexplored portion of the nitrate region, and by the ultimate working of the enormous quantity of low-grade stuff already referred to.

The value of this industry to the Chilian Government can be readily imagined when we consider that an export duty is paid amounting to, roughly, \$12.50 per ton. The annual revenue to the government from this source amounts to upward of \$25,000,000.


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A Plea for More Holes Between 400 and 480 Yards and Fewer of Over 500

(Continued from Page 41)

played three perfectly straight and well-placed strokes. We cannot entirely lay the blame to bad bunkering system in these days of modern construction of traps, etc.; then there must be a weakness somewhere. As a rule, these so-called "three-shot" holes are constructed in places and under conditions where the rise and fall, and character of the ground generally, lend themselves to this type of hole.

As a matter of fact, I have never yet seen a real "three-shot" hole—these holes generally simmer down to two good strokes, and either a pitch with a niblic or a mashie may be a run up; but whatever they are, under normal conditions they are never real tests, and I believe I am right in presuming that, as a rule, golf holes are laid out for "normal conditions."

If we are to have "three-shot" holes, then let them be made in such a fashion, and exacting, so that any *one* of three missed would mean *four* strokes to reach the green.

This could be done not merely by a bunker system alone, but by placing tees at varying distances and angles, so that they might be regulated according to the importance and class of the field and prevailing conditions, etc.

Next, I would make the "third" the all-important stroke; put a big premium on this shot (in fact, all strokes at same, so that the conditions at the time the pin are most important), with not more than a 50-foot entrance to the green. The green itself, on the small side, may be sixty feet wide, traps

right and left—but the entire back of the green I would leave "*open*," not trapped at all at the back, as is so often the case; rough grass, perhaps, but nothing worse. Strokes sliced and pulled naturally expect to be penalized, but there are limits to bunkering the back of golf greens. Players should be encouraged to be up, even to pass the hole! They should be educated to *aim straight*—not compelled to play short. The average golfer is often afraid to "go for it," as the saying goes, because the bunker at the back may "catch" him. This does not tend to encourage good golf, rather does it tend to frighten the player, the bunker at the back being mostly responsible. The mental effect is too great; in fact, if the bunker did not exist, he would go for it—and make it. Bunkers right and left he would forget, knowing there was a real chance "beyond the pin."

I am averse to long holes, which are neither "flesh nor fowl"—neither three strokes, yet considerably more than two. If the "lie of the land" be such that it lends itself so well as to make the third shot an extremely testing one and interesting—similar to No. 4 at Baltusrol, or No. 9 at Brookline—then they are passable; but there should always be at least two ways of playing can be met with the type of stroke demanded.

You, readers, are fully aware that in playing certain holes one day, you may play them just as well, but from an entirely different position, the next day. Herein lies not only part of the glorious uncertainty of the game, but the point must not be lost sight of. Seldom do we play the same hole in precisely the same position and under the same con-

ditions, especially if the course happens to be exposed to wind.

The two holes already mentioned are worthy of special attention and character, and must be termed "three-shot" holes (though both have been reached in two strokes).

They are really two good strokes and a short pitch; others there are, equally as long or longer, but few possess the qualities of these two. The fifth, Bræ Burn; also the seventh, fourteenth, and sixteenth, Baltusrol; fifth, St. Andrew's, Scotland; seventh, La Boulie, France; ninth, Prestwick, Scotland, and others, are worthy of mention, but, as a general rule, these holes may be reached from all kinds of positions. Any one of three strokes may be missed, or even half-topped at the right places, and still secure a par five and a "perfect" half.

As against these three-shot holes, contrast a few really good two-shot holes. Holes on the order of No. 15, Baltusrol; No. 3, Brookline; also Nos. 11, 12, and 15 on the same course, and Nos. 11 and 18, Bræ Burn, for distance; Nos. 2, 10, 12, 16, and 17, Sunningdale, England; Nos. 1, 4, 5, 7, 9, 10, 13, 15, 17, and 18, Sandwich—all between 400 and 490 yards. These are all typical first rate two-shot holes. Take, for instance, No. 15 at Baltusrol; what could appeal better to the golfing spirit than to lay the second at this hole "on the green"? I quote Baltusrol for the reason that this hole may be known best by most readers.

At Walton Heath, considered by some as one of the best inland courses in England, there are practically seven two-shot holes. At Deal, Kent, England, there are ten two-shot holes.

I am fully aware how difficult it is to make perfect holes. It is well-nigh impossible to have them suitable to every player, but holes ranging in length from 400 to 480 or even 490 yards, provided with a change of tees as conditions demand, seem to be better than any other type of long hole. There are comparatively fewer chances, the possibilities of recovering after missed strokes are lessened, whereas the better strokes are well rewarded. The individual who may have arrived on the green in two has a decided advantage over an opponent who may have missed his first or second, as at this distance he still will require three strokes, at least, should either of the first two be "dubbed."

It may possibly transpire that the individual who "dubbed" his second may, with a splendid recovery, lay the third to within a few feet of the cup, then sink the putt for a four; the opponent on the green in the specified number—two—may even take three putts and lose what seemed to be a certain win but a moment ago. This, of course, is bound to happen sometimes, but, as I have already stated, the chances are 90 per cent. in favor of the man who has played *two perfect strokes* on the green—and this is as it *should be*.

In conclusion, it may come as a surprise to some of my readers to know that of all the seven championship golf courses in Great Britain, there are only *six holes* in all these seven courses with holes of 500 yards and over. These courses, acknowledged to be the best in all Great Britain for championship tests, are St. Andrew's, Prestwick, and Muirfield, Scotland; and Hoylake, Sandwich, Deal, and Westward Ho!, England.

The fifth and fourteenth at St. Andrews measure 533 and 516 yards, respectively, while the twelfth at Prestwick measures 508; the sixteenth at Hoylake, 510; the seventeenth at Westward Ho!, 542, and the fourteenth at Sandwich, 505 yards. Neither Deal nor Muirfield possess any hole of more than 480 yards.

Out of seven of the finest golf courses in the world, only *six holes* of 500 yards or more out of one hundred and twenty-six holes! This is not saying much for the so-called "three-shot" holes. I might add that there are fifty holes ranging between 400 and 490, and twenty-seven between 360 and 390 yards.

Holes measuring 480 or 490 yards are no harder to reach in two strokes, generally, than holes around 400 to 440 yards. The elevation of the tee, in most cases, accounts for this.

Of all golf courses, I am of the belief that the Royal St. George's, Sandwich, Kent, England, is well worth

consideration. Its length is admirable.

Appended are the lengths, hole for hole:

1st, 496 yards; 2nd, 312; 3rd, 250; 4th, 415; 5th, 400; 6th, 160; 7th, 490; 8th, 210; 9th, 410; 10th, 400; 11th, 390; 12th, 370; 13th, 481; 14th, 505; 15th, 440; 16th, 160; 17th, 405; 18th, 400.

Total length from official measurements, 6,594 yards.

Several others are:

Deal, Kent, England

1st, 330 yards; 2nd, 376; 3rd, 476; 4th, 150; 5th, 475; 6th, 282; 7th, 383; 8th, 480; 9th, 350; 10th, 375; 11th, 473; 12th, 163; 13th, 400; 14th, 195; 15th, 417; 16th, 483; 17th, 372; 18th, 414.

Total length, 6,593 yards.

Hoylake, England

1st, 420 yards; 2nd, 330; 3rd, 490; 4th, 155; 5th, 410; 6th, 365; 7th, 200; 8th, 460; 9th, 380; 10th, 400; 11th, 190; 12th, 355; 13th, 130; 14th, 485; 15th, 440; 16th, 510; 17th, 300; 18th, 400.

Total length, 6,480 yards.

(P. S.—Note the strong finishing holes on above three courses.)

Westward Ho!

1st, 430 yards; 2nd, 420; 3rd, 470; 4th, 357; 5th, 140; 6th, 352; 7th, 378; 8th, 191; 9th, 464; 10th, 345; 11th, 372; 12th, 436; 13th, 412; 14th, 166; 15th, 398; 16th, 138; 17th, 542; 18th, 405.

Total length, 6,416 yards.

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