

of dollars spent annually in the piping of putting and fair greens all over the country and yet by the methods pursued of racking and caking the soil by heavy rolling, the object sought to be gained is in a great measure nullified. When it is considered that water is the greatest essential for plant life it is easily seen why so much is expended in the piping of golf courses. The water acts upon the plant food in the ground by turning the materials into solution and thus making them available for absorption. It should be the aim of those looking after the golf course to see that the ground is kept in a friable condition and always maintain the porosity of both fairgreens and putting greens. If this is done less water will be necessary for their maintenance and the textures of the grasses are sure to be better.

A heavy roller is a very good thing to have on a course where the soil is of a sandy nature, but its use should be limited to Spring and Fall rolling wherever the soil is clay.

Clover Greens

MANY beautiful lawns and greens are spoiled by the presence of a large percentage of clover plants. The little dwarf clovers usually found in mown turf are natives of this country and are generally most in evidence after a wet season or after the application of manures rich in phosphates or potash.

Clover in lawns, especially lawns devoted to games, is very objectionable, because the foliage being soft, pulps under foot, stains the balls, and becomes extremely slippery and danger-

ous, especially to lawn-tennis players: it holds the dew longer than gress, and consequently keeps quite green during dry weather when the grass burns brown and so gives the lawn a patchy appearance, its foliage being stiffer than the leaves of the grass makes the lawn or green slow, or worse still, slow in patches, and it dies away to a considerable extent in the winter.

The clover plants grow in two distinct formations, sometimes they are found forming self-contained patches, having apparently smothered out all the grass within their reach, and at other times they are found growing interwoven with the grass plants.

A clover plant or patch when in full foliage, in itself, presents a very accurate surface, and a green composed entirely of clover when in full foliage plays "slow" but fairly accurately; in fact, more accurately than it would if only partly composed of clover, but in the winter when it loses its foliage little or nothing is left but its branches which lie on the surface of the ground like so many pieces of stick, and make accurate putting impossible.

If the clover is interwoven with the grass plants it is not so objectionable as when it grows in patches, but as there is always the danger of it growing more vigorously during a favorable season and forming self-contained patches, every effort should be made to eliminate it, or, at least, to keep it in check.

The eradication of clover is always a difficult matter owing to the ramification of its roots, and any attempt to uproot it is doomed to failure and great damage will be done to the turf.

Clover belongs to the natural order of leguminosæ, and has the power, in

common with all leguminous plants, of extracting nitrogen from the air and storing it in nodules attached to its roots.

Grasses, on the other hand, have no power to extract nitrogen from the air, and to flourish, grasses must have a plentiful supply of nitrogen; consequently it follows that if a manure rich in nitrogen is used on turf containing clover, it will help the grass without assisting the clover to an appreciable extent.

After a considerable amount of experiment we have been able to produce a manure with its ingredients so completely balanced, that it will, if used systematically, eventually starve out the clovers.

It is, of course, impossible for us to say how long this process takes, as its action to an extent depends on the nature of the soil and the quantity of phosphoric acid and potash that is available, but if a lawn or green containing clover is dressed with Anti-clover Manure, a distinct improvement in the grass and a diminution of the clover will be noticed within a few months of its application.

Long Holes

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stance, not very long ago we discussed one of the longest holes which I have ever seen. It measured 640 yards and I contended that it was much too long, for the fairway gave none of the shots unusual length. Long was loud in his praise of it, for he had no difficulty in reaching the green in three. The green was large and not closely bunkered. I contended that under normal conditions

there was no excuse for a three-short hole of this length.

"Surely," I argued, "The course offers a great many opportunities for the hard hitters to extend themselves, and this hole demands nothing but three lengthy wallops with no great premium offered for the placement of any one of the three."

Naturally Short agreed with me and on this occasion Wild did, too, for he had visited the rough on both sides. I had no ax to grind for fortunately my third was close enough to the green to enable me to lay my approach dead enough to hole in five, which secured a half with Long. But I found but little pleasure in playing the hole for it seemed to me quite featureless.

Soon after, on another course, we played another three-shot hole, which measured 525 yards and this time we found the green closely bunkered, which seemed to me quite proper, for I maintained that any three-shot hole should demand two long, well placed shots and then a controlled approach to the green. In playing this hole Wild, who at times hits tremendously lengthy shots with his wood, caught two fairly on the nose, and right down the middle of the course. He was favored by a following wind and his drive, as I paced it off, was close to 350 yards. With a brassy he connected with another long one, which, to his great disgust, found one of the guarded pits. Quite impartially he cursed his luck and the builder of that particular hole.

"None but an imbecile would close off this green so unfairly," he raved.

I ventured the observation that it would be quite impossible to bunker that particular green fairly and at the same time admit two abnormal strokes