

Cottonseed-Hull Greens

By C. H. LEAVELL, *El Paso, Texas.*

The attention of the writer was first directed to the matter of cottonseed-hull greens by an article in *THE BULLETIN* of December 16, 1921, by C. V. Piper and R. A. Oakley, wherein they described how Mr. Tom Fairbairn had used cottonseed hulls for putting greens in Mexico. Cottonseed hull is a woody fiber made from the seed of the cotton grown anywhere in the south. The cotton seed goes through a machine in which the oil-bearing kernel is removed, leaving a dry, linty hull as a residue.

The ground should be properly drained before placing the cottonseed hulls, and the soil itself rolled, tamped and scraped so that all loose soil is removed, leaving the surface hard and smooth with possible slight undulations or rolls to make the final putting surface more interesting. A sloping surface is easily made. If the soil is sandy or of such loose



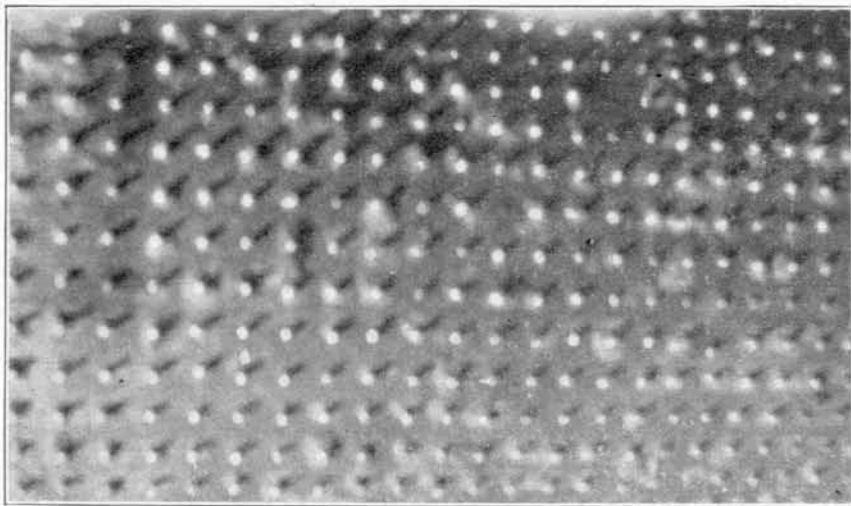
Cottonseed-hull green, showing in foreground how the cottonseed hulls and the grass blend together at the edge of the green.

character that it can not be packed, it will be found necessary to remove 3 or 4 inches of the surface and cover it with crushed stone or a gravel, which when rolled and tamped makes an excellent base for cottonseed-hull greens.

The hulls should be laid on the ground by hand, to a depth of 4 inches, as nearly even as possible, at which stage they are very fluffy, light, and loose. A common roller is then used, and a heavy board 12 to 15 inches broad and 3 feet long used for tamping. Gradually the mat of the hulls is pounded and worked into a single blanket. Around the edge next to the grass a shallow trench about 3 inches deep and 3 inches broad should be dug, and into this the edge of the cottonseed-hull mat folded, and then the soil and grass brought up to it on the outside. This will protect it from the most severe wind. It takes about two or three weeks' use and rolling to reduce the mat to where it is anything like first class; but the longer

it is used, the better the putting surface becomes. The final mat should be about $\frac{3}{4}$ -inch thick.

Cottonseed hull has a marked tendency to pack on the surface, thereby making the putting extremely unstable. This we have overcome by the



Portion of surface of wooden roller, showing dowel-nails used for producing indentations in surface of green.

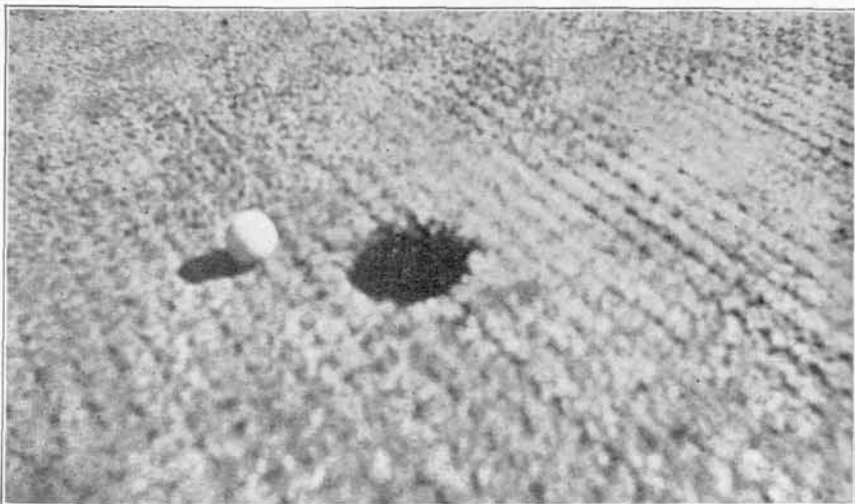


Wooden roller used to make indentations in surface of green.

use of a wooden roller, here illustrated. The face of this roller is covered with dowel-nails set at 1-inch intervals. The roller weighs from 150 to 175 pounds. After the mat has become fairly firm the use of this roller will roughen up the surface, making small indentations somewhat like the

top of a pepper-box. Without this roller I do not think the cottonseed hulls would be a success.

One man with this roller is sufficient for the maintenance of 18 holes. There is no sand to haul and sift, and once properly laid, the cottonseed hulls would not have to be relaid under two years. The cup should be moved from time to time the same as on grass greens. Our experience here is that it takes about 40 to 50 minutes less time for a foursome to play 18 holes than on sand greens, and I believe that our club is saving \$2,000 per year on expense of upkeep.



Close-up view of portion of surface of the green, showing the indentations made by the wooden roller.

I am informed by Mr. Robert S. McCart, of El Paso, that he has patents pending and is prepared to make license-fee contracts.

For courses anywhere in the arid district of the west there is no question about the practicability of cottonseed-hull greens. The hull, as I stated before, is really a wood fiber, and where there is much moisture or rain the hulls, of course, swell a great deal and the putting is much slower than on an ordinary grass green. Therefore in a wet country I am sure that the base of every green should be of porous material, such as crushed stone or gravel large enough to pass through a 1-inch-mesh screen. One ton of cottonseed hulls is necessary for a green 20 yards in diameter.

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