

the spring and more can be killed at that time, but the fall spraying gives a better opportunity for reseeding. The main point is to spray the chickweed at the time when the greatest possible quantity has germinated but before any of it goes to seed. Spraying must not be delayed until the weed is ankle deep, or the spray can not be driven down into it.

The solution is made by dissolving 8 pounds of sodium arsenite in 50 gallons of water. Sodium arsenite can be obtained from any wholesale dealer in drugs and chemicals, and also from firms handling prepared weed-killers. The present cost is about 30 cents a pound in small lots. Care should be taken to get sodium arsenite, and not sodium arsenate.

The solution is applied with some kind of pressure sprayer. For small jobs one of the small knapsack sprayers is very satisfactory, but where several acres have to be covered it pays to use a wheelbarrow sprayer operated by two men, one to pump and one to spray. Care must be taken to apply the solution as a fine mist, and no more than just enough to wet the foliage. If the liquid is poured on indiscriminately it is almost certain to kill the grass and may make the spot more or less permanently sterile. From 100 to 400 gallons of solution are required per acre, depending on the quantity of chickweed present.

Caution. Sodium arsenite is a violent poison, and should be handled accordingly.

Troubles of the Greenkeeper

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The greenkeeper has some task on a golf course. There is the weather. No matter if it rains, or the sun shines, the members expect the greens to be always the same—no long grass in the fairways or rough. It is the greenkeeper's duty to see that it is cut. Players on most golf courses are out from the first thing in the morning until dark in the evening, which gives the greenkeeper little chance to get the work done without interfering with the players. The men working on the course must never get in their way or make any noise with their machines, or talk. As the saying is, they must not move their toes in their shoes for fear it would take the attention of the players off the ball. The greens on most courses in this part of the country have to be watered either morning or evening. Work around here is plentiful, and the laborers are independent. I always find it very difficult to get men to water the greens at night, and therefore it has to be done during the day, which makes more trouble for the players.

According to some members, the greens should never be top-dressed, weeds taken out, or anything else done while play is in progress. Those very players who are the most fussy about being disturbed always expect the greens to be in first-class condition. I suggest that each green be roped off and a temporary hole made while weeding and top-dressing is done, as the work can be performed much faster and thus save expense, as otherwise the men have to stand around a good part of the time waiting for the players.

The greenkeeper has all sorts of grass diseases and insect pests to watch. And another trouble is to get men that know anything about work on a golf course, as most courses are built in some out-of-the-way place where few working people live. The work lasts only six or eight months for

most of the men, and it is not often that the same men return the next year, thus making it necessary to train a new gang. Yet it is the cry of most grounds committees to pay the lowest labor wages and expect good results. From my experience of twenty years with labor on golf courses, I believe it is better to pay a couple of cents more per hour than the average laborer receives than to pay a couple of cents less. The extra cost will pay the club in the end. There are two or three new golf courses in this vicinity which cost from \$75,000 to \$150,000 each to build. Not one of these has a greenkeeper. Either a millman or one of the farmers who sold the ground to the club has charge, because the club will not give a greenkeeper an adequate salary or furnish him sufficient funds to keep up the course. Anyone who knows anything about the running of a golf course knows how soon \$4,000 or \$5,000 can be spent without obtaining any good results, with the present price of grass seed, fertilizers, and labor.

The Care of Golf Course Machinery

L. A. FERGUSON

We note that there is a tendency lately to bring to the attention of those charged with the upkeep of golf courses, the advisability of keeping mechanical equipment in good operating condition, and those responsible for starting this movement are to be commended.

The development of golf in the last few years has made many great changes in grass cutting methods. A quarter of a century ago the idea of keeping large areas of grass in good condition was scarcely thought of. Really fine work was done only on certain limited areas, which could be generally classified as front-door yards, while today many large clubs, country estates and public parks are mowing as much as one hundred and sixty acres of very finely cultivated grass, used as fairways, lawns or parade grounds. In short, grass cutting is now an industry, and a man's-size job if properly done.

Mr. Marshall deserves particular commendation for his remarks in the November issue of *THE BULLETIN*, and if every greenkeeper would take his statements seriously there would be much less annoyance and delay caused by so-called "defective equipment," and the results obtained would be more satisfactory all around.

Responsibility for the condition as it has existed undoubtedly rests as much with the manufacturer and dealer as with the user. Some manufacturers have allowed their products to go out into the field with very little instructive literature, many seeming to think that their obligations were entirely fulfilled by furnishing a price list of repair parts. Dealers many times appear to have felt that when the outfit was safely delivered on the club grounds that their responsibility ceased.

The fact remains undisputed that every club today has a considerable investment represented in power-driven machinery of one kind or another, and this machinery should be given a chance at least to deliver what is in it, and the only way this can be done is by keeping it up to par at all times. The interests of the maker and user are mutual, and both should foster a spirit of cooperation.

One of the most important points to be handled is that of lubrication.