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Turf Culture in South Africa

"Greenkeeping in South Africa," by Dr. C. M. Murray, of the Royal Cape Golf Club, Capetown, South Africa, is an interesting pamphlet which recently came into the Green Section's possession.

The turf conditions in South Africa are comparable to those in our southern states, and the grass which covers both greens and fairways (*Cynodon dactylon*), the Bermuda grass of our country, is there known as "fine quick." The results of Dr. Murray's experimental work are so similar to the results secured by the Green Section that they will be of interest to all BULLETIN readers and will be of particular value in the section of this country where opinions still differ on the proper maintenance of Bermuda greens. A brief outline of Dr. Murray's work is quoted from a letter recently received.

"Up to two years ago I had had to fight a lone hand for my views. The history of that fight forms such a vindication of the correctness of your work and observations that I believe it will not bore you if I give you a brief outline of it.

"When I returned from college in England to my home in this country in 1904, golf was very much in its infancy. It was supposed that turf would only grow in the British Isles, and so we played on hard putting areas covered with 'blue ground' from the diamond mines. These we called 'blues.' They are still in vogue on some of the country courses.

"In 1905 I commenced experimenting with local grass (*Cynodon dactylon*), and in the course of three years we finally gave up the 'blues' and ever since then have played on turf. As time went on the maintenance of the greens began to give us trouble. Being medical with a working knowledge of chemistry I commenced studying the problem of so fertilizing the greens as to favor the turf at the expense of the weeds. By 1914 I had discovered that our grass preferred acid soil and that lime and alkaline fertilizers promoted the growth of weeds.

"Then came the war and in common with most people I went to France. On my return in 1919 I rejoined the committee of my club and we discussed the problem of re-establishing our greens, which were in fair condition but showing a considerable growth of weeds and bare patches in the summer caused by their depredations. My proposal to concentrate on their destruction by the use of iron and ammonium sulfate in the winter and spring, when they flourish with us, and the subsequent use of ammonium sulfate in all topdressings in the spring and summer to stimulate the grass was considered too theoretical, although I had proved to my own satisfaction before the war that the results were sure. We then called in the aid of the staff

of a big fertilizer factory, to whom I explained my views and scientific reasons for holding them. As the result of this conference my proposals were turned down once more, the main objection raised being that our soil was acid and that what I proposed would make it more so, and finally destroy such turf as we had.

"The recommendations made by the experts were that during the autumn we should lime heavily, and two or three months later apply a heavy dressing of bone meal and finally in the early spring whale meat. This was to be pursued each year until the soil had become sweetened, when we might hope for good turf. I had to content myself by putting on record that if this scheme was carried out we should raise an immense crop of weeds, and that if these were not dealt with most of our turf would be destroyed. To make a long story short all that I had foretold came true, and by the end of the second summer our greens were mere sandy wastes with nothing but an odd patch of turf here and there. On the other hand two abandoned greens which had been left to lapse into fairway had rather improved than otherwise.

"After this disaster I was asked to try my scheme. I said I would do so if given three summers to show results. In the first year I used three tons of iron and ammonium sulfate and two tons of ammonium sulfate on the 18 greens. During the second and third years we used 3 tons to the 18 greens of the same formula. By the end of the first year the bare patches were fast disappearing. During the second year water was laid on and with its help most of the greens were completely healed. The third year has now passed and the club are unanimously of the opinion that our turf has never been better. A satisfactory feature from my point of view is that three of the greens that have not had water owing to impending alterations to the course, and all the tees, have recovered more slowly but quite as well as the watered greens."

Arsenate of Lead as a Beetle, Worm and Weed Eradicator

By Norman L. Mattice, Manager, Pine Valley Golf Club

When I entered the employ of the Pine Valley Golf Club last spring permission was obtained to secure the services of Mr. B. R. Leach, of Riverton, N. J., to act in an advisory capacity to supervise the use and application of arsenate of lead on the tees, fairways, approaches and greens. This chemical was used for the purpose of exterminating the grub of the Japanese beetle, which had done considerable damage to the turf in former years. As planned, the arsenate of lead was mixed in the topdressing at the rate of 5 pounds per cubic yard and spread on 1,000 square feet of area. To date the tees, approaches and greens have been topdressed five times and the fairways once. As a result of carrying out this program the main object of killing beetle grubs was accomplished before any appreciable damage to the turf occurred, and in addition three other beneficial but unlooked for results were obtained as follows:

Many of the greens contained chickweed in large quantities. In one instance, on the old 9th, an effort was made to remove some of the chickweed last year by cutting it out, leaving large patches with