Next to sodium arsenite, the best all-around weed-killers are the heavier derivatives of crude petroleum. The cheapest and most easily available is the grade known as fuel oil, which is crude oil from which the kerosene, gasoline, and other light oils have been removed. Fuel oils vary considerably in composition and in their value as weed-killers. They are sold according to their specific gravity, those having a specific gravity of about 31 or 32 degrees being best for weed-killing. Fuel oil should be applied at the rate of about 6 gallons to 1,000 square feet of surface.

A number of other oils, especially the coal-tar or creosote oils, are good weed-killers, but they are much more costly that fuel oils.

Oils are used mostly on dirt roads, where they serve the dual purpose of killing weeds and keeping down the dust. They are not recommended for tennis courts or tees.

Another material which has been a popular weed-killer, and for a long time, is common salt. It is not nearly as efficient, however, as sodium arsenite or oil. Its chief field of usefulness is in combating poison ivy, a very objectionable pest with which many courses are infested. A strong salt brine, made at the rate of 3 pounds of salt to 1 gallon of water, sprayed thoroughly over the foliage about the middle of June will destroy a large number of the plants without exposing the workmen to poisoning.

A substance which will keep down all weeds except a few of the most persistent perennials, and at the same time keep the surface of a tennis court or a road in fine condition due to the tremendous capacity it has for absorbing moisture from the air, is calcium chloride. In using it, it should be mixed with the top soil, at the rate of 2 pounds to 1 square yard of surface. Calcium chloride may be purchased in bags or steel drums.

Bur Clover for Southern Fairways on Heavy Soil

By Henry P. Smith, Spring Lake Country Club, Waco, Texas

For the benefit of any of the members of the Green Section who are interested in southern golf courses where Bermuda grass comprises the fairways and greens and where they suffer from an exceedingly tight soil or soil that runs together, which is frequently the case, I can recommend the planting of bur clover in the fairways. While my education in green-keeping has been mostly in the East, where any kind of clover is taboo, nevertheless bur clover planted in the fall will grow luxuriantly, giving the fairways an attractive green appearance, and it is not thick or heavy enough to interfere with the shots through the green. This clover dies down completely by the middle of May and acts as a great stimulus to the growth of Bermuda, as it is heavy with nitrates and has a tendency to pulverize and separate the soil itself, and the Bermuda that comes up where the clover has been is much more luxuriant and healthy than the Bermuda on any of the other parts of the fairways. We planted bur clover extensively last fall and most of our fairways were about 60 per cent covered. One fairway in particular, which was almost 100 per cent covered, is now the best fairway we have; in fact, the turf on this fairway feels almost like a cushion when you tramp on it, in comparison with the hard surfaces where the clover has not been so luxuriant. There can be no doubt that bur clover is a great stimulant to the grass from a fertilizing standpoint and that it has a tendency to loosen the soil. It spreads rapidly and propagates itself. Its seed is contained in a small bur; hence its name.

We have no difficulty in keeping the bur clover out of the greens. If in early spring it becomes too heavy for play, it will die down with the first cutting and by the middle of May will have entirely disappeared, except that the seed burs may be seen scattered throughout the fairways. We are looking forward next year to our fairways being completely covered. As our soil has a tendency to bake badly, the bur clover has without doubt been a great benefit in loosening the soil. On sandy soils or in the black-land country, it is probable, however, that it would be of little advantage.

The Leaf-Spot Disease of Bluegrass

By John Monteith, Jr., United States Department of Agriculture

In the early part of June of this year the Kentucky bluegrass on the fairways of the Pine Valley Golf Club, Clementon, N. J., appeared brown and unhealthy, as if suffering from drouth. Since there had been abundant rainfall it was evident that the browning of the grass must be due to some cause other than insufficient moisture. A close examination of the plants showed that the trouble was due to numerous small spots scattered over the leaves, which gradually spread until the leaves were entirely brown. This same disease was later reported on the fairways of the Merion Cricket Club, Philadelphia. It probably occurs to a greater or less extent on many other courses, since the disease is widespread on bluegrass.

The disease is readily distinguished by the small spots or blotches scattered over the green leaves. These spots have a grayish or light brown center with a reddish-brown or black border. They may be extremely small or may extend across the full width of the leaf. The spots enlarge and join, with the result that the entire leaf becomes brown. They may cause the leaf to wither and gradually become brown without the production of many distinct spots. In severe cases practically every leaf on the plant is killed or badly spotted, but as a rule the youngest leaves are only slightly injured. In extreme cases the plant may be killed at the crown. The fungus causing this disease is closely related to those causing stripe, netblotch, spotblotch, and similar serious diseases of various grain crops. It is quite distinct from the brown-patch fungus. Unlike brown-patch, it is not limited to patches but produces a general dried-up appearance over the whole affected area.

The unusual weather conditions of the spring were apparently exceptionally favorable for the dissemination and development of this disease, for while it has been observed in different parts of the country during the last few years it has not heretofore been regarded as a dangerous pest. Mr. Alan Wilson says this is the first time he has observed this browning of the bluegrass on the Pine Valley course at this season. The fescue growing with the bluegrass on the fairways was green and healthy.

It seems unlikely that the disease will become a serious pest in most seasons. Spraying or dusting with Bordeaux mixture would probably check the disease if the treatment were made as soon as the disease is noticed and before many leaves are killed. However, no such treatment has been reported, and therefore this is not recommended except on a small experimental scale if conditions seem to require such measures. The disease kills the older leaves but takes some time to infect and kill the new blades. Therefore any treatment with quick-acting nitrogenous