kind among the construction engineers in the armed services and in many of the defense projects such as defense highways, defense housing, etc. So great was the demand that 2,500 reprints were made available to those working on turf for airfields, cantonments, road shoulders along defense highways, etc., with the "Compliments of the U. S. Golf Association Green Section" Requests are still received almost daily for reprints.

The issues of Timely Turf Topics, particularly that of November, apparently have been very useful to the turf men in the armed services.

Advisory Service: Because of the unprecedented war-time conditions, the advisory service assumed an unusual role in the Green Section program. Due to difficulties in obtaining transportation as well as the reduced personnel of the Green Section, it has not been possible for the staff to do as much visiting of clubs as in the past. However, soil samples have been tested and pests have been identified.

Many club inquiries have been concerned with possible war-time substitutes for materials not available for use on turf for the duration of the war, or with possible curtailments by means of which clubs could reduce their labor and expense without seriously interfering with the game or injuring the turf. Also, located in the vicinity of Washington, as the Green Section office is, it has been possible for Dr. Davis to keep abreast of the many orders and restrictions which have important bearing on turf maintenance practices, and to pass the information to member clubs.

One way in which the Green Section has been able to give service, in the absence of a sufficiently large technical staff to conduct an extensive research program in the vicinity of Washington, has been to act as a clearing house for turf information. Where dependable tests of war-time measures or substitute materials have been made by clubs or local associations of greenkeepers and the results sent in to the Green Section office, they were used in answering inquiries on the same subject from others. It is hoped that this role of the Green Section can be developed further next year.

Experimental Work: Samples of the many selections of bents, bluegrasses, fescues, zoysias, and Bermuda grass as well as of some of the southern and western grasses which were propagated in Arlington have been cared for in Beltsville. The Division of Forage Crops, with which we are closely cooperating, has propagated extensively some of the zoysias and Bermuda grass strains which have seemed to have possibilities in the question of turf for airfields, road shoulders, etc., in order to develop sizable quantities of plant material for experimental plantings. The other strains of grasses, including 92 creeping bents, 26 velvet bents, 75 bluegrasses, and 16 fescues, have been planted in nursery rows and will continue to be grown in this way until such time as funds and labor are available to establish a turf garden such as the one at Arlington which had to be abandoned last year.

Many fertilizer plots on golf courses in the vicinity of Washington have been continued through the year. Some new ones

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February, 1948
"For some reason or other, golfers have been heckled by well-meaning citizens for taking time out during this crisis and playing an occasional 9 or 18 holes.

"What is unpatriotic for anyone to take several sticks and a little white pellet and bash it over some abandoned farm where a grass cutter has been applied and where the air is healthy?

"Rubber, you say?

"Why, if all the rubber used in golf balls from the time of Henry VIII down, could be gathered together, it could be stored in grandfather's old barn. . . . That will give you an idea of how much rubber is used in the manufacture of the little pill that makes the game possible."

T. N. Greene, in the Boston Post, Jan. 10, 1943.

were established in the fall to test the usefulness of various organic materials and substitutes for sulfate of ammonia and other inorganic nitrogen carriers which will not be available for use on turf for the duration. The establishment of these latter plots has been made possible through the whole-hearted cooperation of greenkeepers of some of the nearby clubs.

Similar series have been established in North Carolina and in Rhode Island and more are to be established in other sections.

Contacts have been maintained with the men responsible for the experimental greens and fairway fertilizer series established in recent years, with the result that many of the clubs are continuing to rate them and submit their records to us. Apparently a good percentage of the clubs have on hand sufficient fertilizer to use on the fairway test plots and are willing to have their greenkeeping staffs devote the time necessary to apply the fertilizers and record results. The more of these experiments that can be continued, the more significant will be the results which will be available for use after the war when inorganic fertilizers will be available once more.

Play Holds Up.—Sunday, Jan. 17, with temperature in the 70s at Washington, D. C., a survey made by Merrell W. Whitesley, showed play of more than 1440 at 14 Washington district courses. Biggest play of the day was at Rock Creek, only public course open. Manor, inaccessible by public transportation, had no players. Congressional, to which public transportation is bad, has only 10 players. Bradley Hills, also inconveniently located for public transportation, had 25 players including some soldiers home on furlough.

Street cars, busses, hitch-hiking and walking brought players to courses, since private car transportation was under strict rationing and inspectors checked license numbers of cars at the clubs.

Beau Jack in Booklet.—Newspaper publicity on Beau Jack (Sidney Walker) the shoeshine boy at the Augusta (Ga.) National Golf club who turned fighter, sponsored and financed by club members, has been collected and printed in a booklet by one of the club members, Louis Brush. Mr. Brush is president of the Brush-Moore Newspapers, Salem, O.
The need for concentrating all our efforts on war production means that we are no longer manufacturing Louisville Power-Bilt Golf Clubs.

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February, 1943
TO THE GOLFERS OF AMERICA:

In our enthusiasm to be patriotic, or in a state of suspense caused by gasoline rationing, some of us have been tempted to give up golf.

As to gasoline and golf, the situation is not clear. Frankly, the USGA has no rabbits to pull out of the hat. We can only await developments.

But as to patriotism and golf, our Government has a war-time program of encouraging us to be in shape. Paul V. McNutt has said: "The importance of Physical Fitness in this great emergency cannot be overemphasized, but the objective of our program cannot be realized unless every individual in each community is made conscious of the value of physical well-being."

Golf chimes in with this. You know what a tonic golf can be. And golf stands for sportsmanship, fair play.

Health and high morale are not luxuries. If it is patriotic to be fit physically, mentally and spiritually, it is patriotic to play golf, as long as we help and not hinder the war effort.

So let's keep golf going at our home courses, even though we'll have to sacrifice niceties and some of our comforts and service.

Probably you'll want to play golf after the war. But will there be a course to play on? By supporting your Club now, you'll help to insure its continuance. If you give it up now, you may be doing a disservice and may have to pay more dearly later, in many ways. If your Club folds up, there are still taxes on its property to pay; and if these are not paid, the property may be sold for taxes. In view of the building restrictions, golf property has no ready market where it could realize anything approaching its value in peacetime—so why sacrifice it?

The USGA commends this to your attention. This is a non-profit organization, composed of your Club and hundreds of others. We officers serve just for love of the game; we aren't paid and, in fact, we pay our own expenses. We have no axe to grind. Our interest is in the best interest of the Nation and golf's continued contribution to it.

You supported your Club in the normally "good" times. Now, please, "keep 'em swinging!"

GEORGE W. BLOSSOM, JR.
President.

Purdue’s Two-Day Short Course Begins February 15

FIFTH annual two-day short course for greenkeepers will be held at Purdue University, West Lafayette, Ind., from 1 p. m Feb. 15 through Feb. 16. Indiana Greenkeepers Assn. is sponsoring the course in cooperation with the university. A fee of $2.50 covers all costs of the conference.

Included on the program are talks by Dr. Geo. D. Scarseth and Prof. Glen Lehker on soils and fertilizers; Prof. G. O. Mott on grasses and fairways; and O. C. Lee, botanist and Carl Brezloff, greenkeeper, on general maintenance problems. A dinner meeting has been scheduled for the evening of Feb. 15, at which Herb Graffis, editor of GOLFDOM, will be speaker.

For additional information on this two-day conference, write M. L. Clevett, Purdue Field House, West Lafayette, Ind.

Signals Mixed.—An Associated Press sports column written by Hugh Fullerton, jr., says "members of the Mid-Atlantic Greenkeepers' Assn. recently were urged to "coax members" to turn golf "courses into huge gardens." Several newspapers headed the column to the effect "Urge Links Be War Gardens." This was jumping to the wrong conclusion. What the Mid-Atlantic greenkeepers did consider was not a switch of entire course areas but operation of Victory Gardens by members on the clubs' unused acreage, with members and course maintenance labor both tending the Victory plots.

Harlow's Sons in Service.—Bob Harlow, formerly Hagen's manager and PGA tournament bureau mgr., and now Associated Press sports radio chief at New York has three good reasons for watching the war news closely. For some time all his boys have been with the armed forces. His son Harrington, a lieutenant, is with a bomber crew in the south Pacific; another son, Robert E., jr., whose paintings have been hung at foremost art shows, is in air force training in North Carolina; and his stepson, Eldon, is with a signal corps outfit.
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February, 1943
Watch Out for Insect Damage
By J. S. HAUSER
Ohio State University

This season, with course labor likely to be too busy at regular maintenance duties to be sidetracked to repair turf damage caused by insect pests, it is more necessary than ever for the greenkeeper to keep alert for signs of infestation. This paper, delivered at the University of Maryland short course last season, discusses methods of fighting the more common types of insect pests. Note that few of the materials recommended are, so far, off the market.—Editor.

In certain parts of Ohio, particularly in the sandy areas around Toledo, the ant problem outweighs most others of maintenance importance. It is not unusual in this section to find 4,000 to 8,000 fresh anthills daily on some of the worst affected greens. The individual hills vary in size from quite small to as large as 5 in. in diameter and 1/2 in. high. These hills not only seriously interfere with play but increase the cost of upkeep.

When the number of hills were few to the green a successful method, spot control, was found, which consisted of injecting a small amount of carbon bisulphide into each hill opening. In some cases a small amount of poison bait spread around was successful.

In large areas that were heavily infested, the spot treatment was out of the question and poisoned bait had to be used. The most effective bait in these areas was found to be a mixture of 1 lb. of brown sugar in which is mixed an ounce of paris green. In some instances, if the mixture was too sticky, some flour was added. Applied at the rate of 1 lb. of the mixture to each 2,000 sq. ft. of green surface, the active ant population was reduced more than 80 per cent in 24 hours.

Paris Green for Ants

Application was made by means of a tin can or shaker, the bottom of which had been replaced with a wire screen of 12 meshes to the inch. The shaker was held shoulder high and given a slight jar at 3 ft. intervals. Air currents scattered the bait in a fairly even deposit. A light, even deposit is necessary to prevent burning of the grass, which would occur if the bait fell in large lumps or masses. The best time of application is mid-day when the grass is dry. To be on the safe side, it is better not to water infested areas in the morning on the day of the treatment. All the infested areas must be included in the application, including the apron and approaches. One application is not sufficient, but several should be made either on succeeding days or on alternate days. From the results obtained this offers the best method of control found thus far.

The larger mound-building ants that are sometimes found on fairways, or more commonly in the rough, can be easily controlled by injections of carbon bisulphide in the hills.

Controlling Chinch Bug

The hairy or short-winged chinch bug is particularly destructive in turf of lawns and golf courses throughout Long Island, eastern Pennsylvania, Connecticut and around the Cleveland District. In the latter locality in 1938 it almost totally destroyed the turf on the Kirtland CC polo field before the seriousness of the situation was realized.

The bug damages the turf by piercing the plant structure with its beak and sucking out the sap. It is especially destructive to the bent grasses, which afford it ideal hiding and breeding places among the matted stolons. Other grasses also supply food and breeding places, particularly orchard grass.

The full grown bug over-winters in the turf and becomes active in the late spring, after a period of several days when the temperature does not go below 70 degrees F. On very hot days they show marked activity and are easily observed, but during cool, cloudy weather, although plentiful in numbers, they are hard to find.

The first young appear in June, followed by a second brood in August. With this information an effective plan of control can be worked out. The first indication
of an attack by this pest is a deadening or drowning of the turf in small patches that can readily be mistaken for brown-patch. These usually occur in sunny rather than shady areas and as the damage continues the spots enlarge until a wide area may be destroyed. Fortunately, closely-clipped greens are not as susceptible as the aprons and approaches.

When all factors are considered—such as cost application, safety and lethal effect on the insect—finely ground tobacco dust is one of the best of control measures. This dust should contain at least 1% of nicotine and be ground fine enough so that all of it will pass through a 60 to 70 mesh screen and 75% to 80% pass through a 100 mesh screen. Coarse dust or one deficient in nicotine is worse than useless.

The tobacco is applied as a dust when the turf is dry at the rate of 25 lbs. per 1,000 sq. ft. and watered in to minimize any damage to the grass. Results should not be expected for 2 to 3 days because of the slow killing action. In heavy infestations four applications each season are recommended. The first treatment is applied in early June to catch the first brood, followed by a second treatment a week later. The third is made in early August at the time the second brood emerges, followed by a fourth after an interval of a week.

Another method of control was tried but more time is needed for experimentation before any recommendations can be made. This consisted of a 5% kerosene emulsion applied at the rate of 1,800 gals. per acre with a power sprayer. One-third of the quantity of spray was applied first, followed in 5 minutes by the second third. Five minutes later the final third was applied. The theory is that the first two applications thoroughly activate the insects and the last application kills them.

Sod Webworm Sometimes Serious

The sod webworm is always present in small numbers but it is only occasionally present in such large numbers as to become a scourge and do considerable damage. The first indication of an impending outbreak is a large flight of moths in early summer.

The webworm moth is easy to identify from all others because of the closely folded wings when at rest. This habit makes the sides of the body parallel. The legs extend outward from the body and the antennae forward from the head. The insects are about an inch long and silvery...
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white to light gray in color, depending on the species. They spend the day at rest in the longer grasses and take flight upon the coming of darkness. At this time they are strongly attracted by lights.

Another means of forecasting an outbreak is to observe the numbers of moths that are flushed from the fairway and areas of taller grass. The moths then fly a short distance and alight on grass stems with the body parallel and closely pressed to the stems. By observing these "signs" the greenkeeper should be on his guard and make frequent inspections to determine if any damage to the turf has started. It is very important that the outbreak be caught in the early stages for, if control measures are taken in time, serious injury to greens may be prevented.

The taller grasses of the approaches are the first areas attacked, but if nothing is done the infestations soon spread to the greens with great rapidity. Furthermore, the smaller the larvae the more susceptible they are to the control treatment. High quality turf is more susceptible to injury than thin grass but closely clipped areas are more likely to escape injury than coarser clipped areas.

There are two or more broods a season which hatch after a period of ten days or so from eggs dropped indiscriminately by the moths as they fly around at night. The larvae start feeding on the grass blades but retreat to the lower strata as they grow older, and there, feed on the stems as well as the blades. The caterpillar is very active if disturbed and can move either forwards or backwards with great rapidity. They are dirty gray in color with regularly spaced brown spots on the body and are about one inch long when full grown.

Lead arsenate, either in solution or as a dust, is a proven method of control. However, everything taken into consideration, the dust treatment gives the most satisfactory results. The method of procedure is as follows: a hand duster of the rotary fan type is used to distribute the undiluted dust on the turf at the rate of 2 lbs. per 1,000 sq. ft. of green or turf. The grass is then brushed with a stiff fiber broom to dislodge the arsenate from the grass blades and get it down next to the stems where the worms are feeding. This is followed by a thorough watering by means of a strong hand-directed spray. Further water is withheld from the