and can be carried out quickly. The seed stalks are dry and fine. They should be cut in the morning after the dew is off and brought in before the dry part of the day has passed, and should not be left out over night. Cut with a hay mower and set the knife to cut as high as possible to reduce the amount of bulk of seed stalks. Leave the hay in the windrow until ready to be taken in. It will be sufficiently dry so there will be no danger of heating when the crop is stored provided it is not piled more than a foot deep. Handle it as little as possible, and spread on a clean tight floor. This will save much seed which will shatter off as the chaff and seed dry.

For home consumption the seed may be run through a hay chopper set to cut the stalks one inch long. The cut hay can be packed in burlap bags. A 100 lb. fertilizer bag will hold about 18 pounds of chopped hay which will contain enough seed to plant from 1,500 to 2,000 square feet of golf green. Store the bags in a dry loft.

It is my opinion that the seed is more easily handled and produces better results when applied in this form than as pure cleaned seed. The seed is well distributed through the chopped hay and will spread evenly over the entire surface. The chaff makes an ideal marker to serve as a guide when spreading. The average grower cannot bring himself to accept seed in this form. He is afraid there might be almost anything in the bag but velvet seed. In a well cared for seed nursery there are but few weeds. Not many weed seeds ripen at the same time as velvet. Try the method some time.

After the seed crop has been harvested the nursery should be cut down to lawn length $(\frac{3}{4}'')$ and mowed regularly until frost stops growth. A crop of stolons can be taken from the same nursery in September following the seed harvest. But where continued seed production is desired stolon removal is not good practice. After a plant has produced seed it should be permitted to grow leaves to build up its vitality to perpetuate itself. Growing two crops in one year thins out the stand of grass and reduces seed production.

If both seed and stolons are required in the same season it would be more desirable to have a separate nursery for each. After a few years of use they could be reversed in purpose, producing seed on the stolon piece and stolons on the seed piece. This is good practice and would save replanting both nurseries.

Stolon Production Practice

The maintenance routine for the stolon nursery is the same as for sod production until August. From August first until the stolon crop is harvested mowing should



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for sets of woods and irons received many months ago. Sorry we can't give rush service. Please continue to place orders many months ahead of your requirements. cease. Mowing until August prevents the development of seed stalks. The close cutting causes the plants to branch considerably which, in connection with topdressing operations, increases the number of plants in the soil and results in more stolon production.

Stolon development before the first of September will be slight. Growth increases rapidly as cool weather comes on. By late September a good vigorous crop of short well branched stolons will be available. Cutting and planting should be delayed as long as possible but October 15th is about the latest date for successful planting.

Cutting the crop is an expensive operation. The usual method is by hand with a short carving knife of not too good quality. The blade should be soft enough to permit quick sharpening with a file or scythe stone. Frequent sharpening is necessary. The cutting should be close to the ground. Not so close as to cut off the crown of the plant nor so long that the nursery cannot be cut with the lawn mower after the stolons are removed.

Cutters should work on their knees making short fast strokes with the knife and sweep the cuttings backward into windrows. Keep the cut stolons picked up and piled loosely in the shade. Cover them at night, in the field, if not to be used the day they are cut. Covering keeps the dew off but keeps the cuttings in a moist atmosphere which helps preserve the softness of the stolons. Soft green shoots are what is wanted, not dried hay. Water the stubble each day after cutting. At the end of the harvest season the whole nursery should be cut to lawn length regardless of whether or not all stolons have been removed. If the nursery is cut to lawn length after harvest, supplied with food, water and topdressing it will maintain itself in good health.

CADMIUM

(Continued from page 71)

that these cadmium fungicides do not discolor the grass or check its rate of growth.

The preferred method of use is to apply the fungicide as a preventative treatment before the time when dollar-spot normally makes its appearance and to continue applications at intervals of approximately ten days to two weeks. Even when applications are not made until after the appearance of dollar-spot the cadmium fungicides will stop the spread of the disease and permit early and rapid recovery of the grass.

While observations and tests have not been so numerous or widespread as for dollar-spot, there is evidence that the new fungicides, will also control pink patch and copper spot, and where they have been used in regular preventative applications for dollar-spot control they have shown a marked tendency to reduce the damage caused by large brownpatch.

NEGLIGENCE

(Continued from page 37)

down on the ground near one end of the flagpole that lay across the driveway, and leaned back against the pole.

Shortly a limousine purred up the driveway, the owner sitting beside his chauffeur. Viewing the surroundings for a place to park, and clothed in the aloof dignity of his profession, the chauffeur inattentively failed to observe the flagpole until the car was almost upon it. Then he attempted to swerve around it, but hit it instead with one wheel. In a peculiar quirk of inexplicable fate, the blow caused an upward flip of the end of the pole against which Jim Steenbock was sitting, and it struck him in the back and on the head inflicting grievous injuries.

Jim sued the country club for his damages, claiming he had been injured because of the negligence of its employe in laying the flagpole across the driveway. But he was out of luck. The Nebraska court ruled that the ill-considered act of the workman was not the direct cause of the injuries. The chauffeur's negligent driving was responsible for the accident.

One more account of an episode from real life will complete the present picture of what the law may have in store for golf clubs or owners when things go amiss around clubhouses or their environs.

The Mohawk CC was promoting a social affair at night for its members and their friends. Goldie Cummings had arrived and was gayly participating in the festivities. Goldie was not a member, and she had never before been on the premises. How she came to be on hand was a mystery to some, who raised wondering eyes. What they did not know was that she was a friend of a friend of an assistant manager, and hadn't really barged in.

As a part of its plans in entertaining, the club had erected a tent some 20 or 30 feet from the clubhouse, and a hedge row was in between. Guy ropes, fastened to stakes, held the tent up. The outside scene was in darkness, but within clubhouse and tent 200-watt bulbs made them brilliantly aglow.



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At one stage of the evening's merrymaking, Goldie was out around the hedge that separated clubhouse and tent. Just why she was at that darkened spot at the time is irrelevant to the present revelations. But she was there. And she had a companion. The two finally decided to go into the tent, and undertook to do so. But being a stranger to the surroundings, the young woman was unaware of the long guy ropes running from the tent, and the failure of the club to light the premises prevented her from seeing them. In the darkness, she tripped over one of the ropes, stumbled forward without being able to regain her balance, and sprawled to the ground, sustaining breaks and bruises that took many weeks in healing. For those injuries, the Illinois court required the club to pay her \$500.

WHAT MAKES COURSE GREAT

(Continued from page 52)

year by many clubs as each successive green committee and/or greenkeeper strives by trial and error to maintain satisfactory turf under soil and/or drainage and aeration conditions, which permit practically no chance of real success until the underlying physical conditions of the soil and drainage are corrected.

I am very familiar with one or two such cases. The first 9 holes at Sea¹Island and the 18 holes at the Jekyll Island club, near Brunswick, Ga., were designed originally by Walter Travis and constructed under his supervision in 1927 just before he died.

Of course he belonged to the old school of designers and the use of power mowing equipment was then just beginning to come into widespread use. He used to sit out on the course during the construction work and explain over and over again to the workmen that the bunkers and trap banks should look just like the curves of a beautiful woman, with appropriate hand gestures to illustrate the point. When he was through, he had a series of perfect steep-sloped haydoodle-like mounds all over the courses, which could be maintained only with a hand scythe or, the southern version of this implement, the "swing blade."

Fortunately, at Sea Island, Colt and Allison were called in the next year to build the second 9 holes and they completely re-designed all of the greens and traps in the first 9 along more modern lines. However, at the Jekyll club



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(though it was an exclusive millionaires' club, and at one time the membership was said to represent 75% of the total capitalistic wealth of the country) these "haydoodles" were never changed and year after year they remained, not only to mar the natural beauty of the course but to be laboriously maintained in some fashion by hand. Fortunately, golf architecture has come a long way since that time and such mistakes are not likely to be repeated, but many of the old mistakes still remain uncorrected to harass the greenkeeper.

GRUB IDENTIFICATION

(Continued from page 62)

cycles, and I presume that Professor Hutson has also. It would be my opinion that the main reason why DDT might not be sufficiently effective in controlling these three-year cycle species is that the larvae of these species probably feed deeper in the soil than, for example, the Japanese beetle grubs, and thus escape the effect of the poison which is usually concentrated in the upper two to three inches. However, I may not be correct in this surmise, and it may be that these native species just are not susceptible to this particular poison. We do know, of course, that DDT is not a 'cure-all', and that there are a number of species of insects which are apparently not susceptible to it.

"I would not want to make a guess about Chlordane. In our preliminary tests with Japenese beetle grubs, this material has appeared to be fully as effective as DDT and more rapid in its toxic action. However, we have not had an opportunity to get results from our large-scale tests, which are in progress, nor have we had opportunity to try this material against native white grub species."

Professor John C. Schread of the Connecticut station made a number of tests with several of the newer materials and used them on fairway areas. He made the following comment about his tests: "Turf areas treated with Chlordane in 1947 at Wepauwaug Country club, Orange, Connecticut, contained in one instance both grubs of Japanese beetles and white grubs. The insecticide was used at various dosage levels, and it was seen that where the toxicant was employed at a technical level of 24 pounds to the acre complete destruction of white grubs as well as Japanese beetles ensued. A longer period of time was required for the reduction of the Phyllophaga population owing to the fact that the grubs are larger than Japanese beetle third instar grubs and also slightly deeper

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in turf than the latter. No accurate check was kept on the rapidity of kill of the white grub. In any case, however, when the insecticide was applied to turf before the middle of May they were all destroyed by early July.

"We are undertaking more reliable experiments this season on the use of Chlordane for this purpose. When the results of this investigation are available, I will be glad to release them for publication. At this time, however, I believe that if Chlordane is used at the rate of 500 pounds of 5 per cent dust to the acre, or 50 pounds of 50 per cent wettable powder, good control of Phyllophaga may be expected. Due to the fact there are quite a large number of species of Phyllophaga in the United States, those most commonly found in western states may or may not be the same species as occur in Connecticut. This may have no bearing on suppression of western

The customary recommendation for lead arsenate ranges from 400 pounds per acre, maximum, to 200 pounds minimum. At present prices this is approximately \$100.00 per acre for material alone at the 400-pound rate, as compared with \$12.00 to \$15.00 for DDT, and \$25.00 to \$30.00 or more for Chlordane at the rate suggested by Professor Schread.

Identification of the grub species causing damage would seem important. Where injury is due to grubs of Japanese, Asiatic, annual June beetle and other animal species, the use of DDT at 25 pounds actual DDT per acre, or Chlordane at 4 to 10 pounds actual toxicant should give effective control at moderate cost per acre.

When white grubs of Phyllophaga are responsible, DDT is not the thing to use until more evidence is at hand. It may be necessary to use lead arsenate for effective control. Treatment is justified even at present high prices in regions where broods A and B are both bad, because severe damage to turf is likely two years out of three. The other alternative is to use Chlordane at the higher rate suggested by Professor Schread, namely 25 pounds per acre of actual Chlordane.

CADDYMASTER IS MAINSPRING

(Continued from page 64)

By doing this, he always knows if the ball he finds is his player's and avoids argument with other players on the course."

At the end of each instruction period given over to a set of lessons, the kids are quizzed. They must maintain a high grade average or take the lesson they fall over again. In order to cut down on caddy absenteeism, Urista has set up an incentive which keeps the kids coming. It is a point system whereby each kid receives so many points for each appearance and loses a like amount for each unexcused absence. The caddies are graded on each round by the players they work for—excellent, good, fair, or poor. They get points for the first three grades, and lose points for the fourth.

The system is set up in the following manner:

Saturday attendance—25 points. Sunday attendance—25 points. Week day attendance—10 points. Saturday and Sunday plus three week

days-100 points.

CADDYING

Doubles

	9 holes	18 holes
Excel.	40	75
Good		55
Fair		35
Poor		-30

Singles

	9 holes	18 holes
Excel.		50
Good		35
Fair		25
Poor		-20

When an individual attains 500 points, it usually takes about two weeks, he is awarded a \$5 gift certificate to one of the Mill Citv's department stores.



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Tipping Eliminated

Under the Urista system, outright tipping by members is eliminated. Urista's Superior club will charge caddy rates of 45 cents an hour this season. Each member will automatically be assessed 10%of whatever he must pay the caddy. This goes into a caddy fund from which, at the end of each month, \$25 or \$30 is divided among the three caddies whose records are tops in points. The rest of the caddy fund is used to buy recreation equipment for the caddies.

To maintain organizational interest, each member of the caddy club is on some kind of a committee. There are the social committee which organizes outings and parties for the kids; the handicap committee is just what its name implies. It sets the handicaps for the caddies. The kids, incidentally, are graded off into teams with regard to individual ability. This gives the club outstanding teams to enter in the local junior tournaments as well as giving the not-so-deft members something to shoot at.

Caddy Self-Government

The most austere committee of all is the caddy council. It is a self-governing elective body which decides what awards and punishment shall be meted out to deserving members. For instance, any caddy caught swearing, gambling, fighting, or indulging in other forms of rowdyism will be docked as much as 50 points. On the other hand, a caddy setting a good example for his fellow members by regular attendance or a score better than usual for him is awarded a certain number of points.

"We are building a caddy clubhouse at Superior," boasts Urista," in which the playing members would not mind sitting."

It will provide the caddies with lockers in which to store their clubs, lunches, and accessories. It will provide them with



Golfdom



showers in which to clean up before going home. It will provide them with recreational facilities like checkers, cards, and table tennis to occupy their spare time. If they wish, caddies can spend their spare time working around the course. This would entail elimination of weeds, finding lost balls, or in any way improving the general appearance of the course. For doing this, caddies receive the privilege of playing the Superior course on any weekday afternoon.

Urista has taught his caddies that the course is as much their place of business as the club professional's. They have learned to respect it as such.

A caddies' monthly newspaper will be published at Superior. It will carry articles written by members and caddies alike, the complaints and compliments of both. It will also carry news of which caddies are winning the month's tournament. This will enable members, each of whom will receive a copy at his home, to offer words of encouragement to the most promising caddy-golfers and tips to the less developed.

Caddy Employment Application

Application for employment as a caddy at the Superior Country club will be made as it would at any place of business. On the application, the prospective employee will answer the pertinent personal information asked. He will then obtain his parents' written consent to his employment as a caddy. A physical examination must be taken by each applicant in order to determine whether or not he has any physical defects which would impede his success in the job. For instance, if the physical seems to indicate that the applicant has bad eyes, he will be examined by an oculist. If the oculist confirms the indication, the applicant is fitted with glasses at club expense.

Playing members do not escape Urista's program unscathed. They do not undergo nearly so strenuous a training as do the caddies. Their training comes in the form of posters placed at strategic points in the clubhouse which are constant reminders:

"I'M THE GUY WHO SWORE AT MY CADDY TODAY."

"TREAT YOUR CADDY AS YOU WOULD YOUR OWN SON — HE MAY DATE YOUR DAUGHTER SOMEDAY."

"GIVE YOUR CADDY AN EVEN BREAK — REMEMBER, HE CAN'T TALK BACK."

Superior opened its 1948 golf season with what Urista calls "Kickoff Day." Members paid an extra dollar and played in a foursome made up of two members and two caddies. Each player toted his own bag. In the evening there was a member-caddy banquet followed by golf movies. The idea was to start members and caddies off on a friendly footing with each other.

The conservative critic might, at this

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point, condemn Urista's plan as an "idealistic theory that would never work in practice."

System is Tested

Last summer, Urista gave his plan its first big test. Using the "Tiny Karpets" as a nucleus, he bossed the caddying job of the 1947 National Publinx tournament at Meadowbrook. Joe Dey, executive sec., USGA, said it was one of the finest caddying jobs he'd ever seen.

"Dey," says Urista, "has further encouraged me by giving me reason to believe that in the golf world there is definitely room for such a specialist. I would like someday to represent a golf association with my plan. After all, there are traveling scorekeepers, equipment managers, and wardens. Why not caddy troubleshooters ?"

Western Junior Championship At Purdue Univ., June 15-19

The 31st Western Junior Championship, the oldest event for teenagers in the U.S., is to be played at Purdue University, June 15-19. This year, the WGA, under the leadership of Pres. Maynard G. Fessenden, is emphasizing caddie participation. The WGA believes that boys who play golf make the best caddies, and as part of the WGA national program to increase the supply and improve the quality of caddie service, all WGA member clubs are urged to see that their caddies enter this Junior Championship. Contestants will be housed by the University in the Men's Residence Halls adjacent to the golf course. Qualifying round for the 32 places in the match play starts Tues., June 15. Match play

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