

tained considerable amusement from the numerous requests of club members for extensive spraying operations on the other 17 fairways.

The experience of the chairman mentioned was no doubt duplicated on many golf courses. Such experiences this season in various districts have given further concrete evidence that these chemicals have distinct merit in golf course maintenance. They also serve to indicate that the rank and file of golf members, abusive though they be at the time, are fundamentally interested in course improvement and are willing to tolerate (though not without comments) a temporary discoloration of turf in the interest of permanent turf improvements in the way of weed removal with the consequent thickening of the grass.

In the fall of 1937, in cooperation with the USGA Green Section, the Atlanta (Ga.) Athletic Club established a small turf garden on the East Lake course. In this garden several combinations of materials for improving the physical condition of the soil were put under test; also a number of the best of the northern putting green grasses were put on trial. The garden was well cared for and every effort was made to give these grasses a fair chance.

The prolonged rainy period during mid-summer gave the turf garden a severe test but in spite of adverse conditions some of the bent strains continued to grow remarkably well. The results were sufficiently encouraging to justify planting a bent green in the fall of this year. In this green five of the most promising varieties of bent were used to try to determine which would be the most practical in that climate. The results obtained at the Atlanta garden can by no means be interpreted as proving that bent is practical for that district. The tests have clearly indicated, however, that bent is by no means as impractical there as has previously been supposed to be the case. Whether it will survive the more difficult tests remains to be seen but it must be admitted that it has given a good account of itself in the qualifying round.

If bent or any of the "year-round" grasses should prove practical in the Atlanta district it would eliminate the need for the double greens for winter and summer play. At the same time it would provide a more desirable putting surface than has been provided by Bermuda grass. The continued success of the Atlanta experiments would no doubt have an important bearing on greenkeeping methods on many Southern golf courses.

COAST COSTS AT ALL-TIME LOW

By ARTHUR LANGTON

MORE golf course for the money seems to be the continued trend in Pacific greenkeeping ranks. Golf courses on the western shores are undoubtedly better than they ever have been, but at the smallest per-blade-

of grass cost in history, due to the demands of golfers for a finer golfing medium coupled with their reluctance to loosen purse strings. As one greenkeeper pointedly remarked on the current situation, "Recession?" Say, we haven't got over the first depression yet!"

Definite progress has been made in turf technology during the past year, chiefly because of the necessity of providing better golf, even with cramped budgets, rather than as a result of research. For this reason, trends rather than developments are the order of the day.

California learned a bitter lesson from the unprecedented floods which swept

down from the mountains to valleys and the sea early in the year. But whether residents of the state will refrain from building golf courses, houses, or even towns on former waterways, no matter how innocent appearing or long unused, remains to be seen; but in the light of past performance an influx of new residents will build its homes and clubs in natural channels and hastily-filled waterways.

Even so, golf courses proved, that because of their widely-grassed areas, they could take a flood and protect the surrounding country from damage better than anything else. As a result a new



California terrain permits the laying out of spectacular holes, such as this beauty at famed Cypress Point, which uses the Pacific Ocean as a hazard on the right.

concept has sprung up as to the value of a golf course to a community in this district where sudden heavy rainfall is an annual threat. There was no damaging run-off from fairways and other heavily grassed-over areas. An example was a Bermuda-grassed, 120-acre golf course near Los Angeles which had an average grade of 5 per cent. After days of storm, 7 inches of rain were dumped on this course in 24 hours. While houses and lives were lost in the surrounding area, no damage was done either to the golf course or the property immediately below it.

The value of such a course to the community is tremendous and should be kept in mind by the local council when tax assessments are in the wind. So successful has grass been in counteracting the destructive force of floods that there is a possibility of large areas being grassed over in particularly dangerous spots for the purpose of making the water "walk down grade instead of run," to quote Henry Wallace. In which case the services of greenkeepers should be at a premium.

John Morley, a dean of American greenkeepers, was presented with a watch by the Ohio PGA at the Ohio Open championship. Morley celebrated his 71st birthday at the tournament, which was held at his home club, Youngstown (O.) CC.

Morley founded the National Association of Greenkeepers, now known as the Greenkeeping Superintendents Assn. John has spent more than a quarter of a century in golf course maintenance work and was one of the pioneer greenkeepers in promoting the coordination of science and practical work in greenkeeping.

The application of water during dry seasons has received considerable attention on the Pacific Coast from where many innovations in irrigation have come. Contending that the application of a small amount of water over a wide area over a long period of time will do more good to grass than a lot of water dumped on the turf in a short period of time, a manufacturer of sprinklers is developing a spray which will cover a wide area with a minimum volume. This system has the added advantage of not requiring large pipes and a series of laterals scattered around underground. This development is believed to have strong possibilities of adoption in the East on courses which have not gone to the expense of putting in a costly pipe system for the few months of the year when irrigation is needed, and where soils are such that a uniform watering system can be applied.

Turf Must Be Treated Differently

In California, however, it is difficult to prescribe a uniform method of treating even one fairway, let alone one golf course. The nature of the land is such that sands, loams, adobes, and clays are scattered around in glorious abandon in various combinations. Some courses have as many as 5 distinctly different types of soils to contend with, which demand different kinds of watering to obtain approximately uniform grass coverage. Nevertheless, the application of water more slowly and more evenly than has been the practice in the past may be the means of conserving water and growing more suitable grass. There is much

study that has yet to be given to this matter.

Manufacturers are beginning to do something about a situation of which the greenkeeper has been painfully aware for many years: that sprinkler parts are subject to a tremendous amount of hard usage and that unsuitable metals soon make an addition to the scrap heap. One company is using a bronze alloy which was designed as oil field tool metal which would not yield a spark. Chisels and hammers have been manufactured from it, which would indicate that a sufficiently tough sprinkler metal had been found. Non-corrosive steel has also been used in some sprinklers. Another improvement is the use of a metallic bearing to take the place of leather washers.

Another development which is casting its shadow before is the advent of a practical traveling sprinkler, one which will move in a straight line with a minimum of complications. The principal objection to this type of apparatus has been that it is too cumbersome to move readily. Advocates of the traveler maintain that this objection will be overcome by the fact that once the new machine is set it will move forward in a straight line without any further attention during the irrigation period. The outstanding advantage of the traveling sprinkler, of course, is that in moving in a straight line, it will water a fairway with a minimum of overlap, covering a stretch 400 ft. long by 150 to 250 ft. wide. This would demand fewer outlets and more simplified water mains than are now in use.

Seeding Becoming Most Popular

Concerning the seeding of bent greens, stolons are losing in popularity and seeding is gaining. A better textured green is claimed by the advocates of seeds. Furthermore, a seed green on the Coast can be made ready for play in just about the same length of time as a stolonized green. And, although the stolons do not require the elaborate soil preparations as for seeds, the seeds require only a fraction of the topdressing and care required by stolons.

As a tribute to the grass growers of Oregon and Washington, seed dealers report that more and more domestic bent is being purchased compared with the purchase of imported bent. They also report that the Czechoslovakian crisis has resulted in considerable doubt as to de-

liveries of seed from central Europe.

Fertilizing practices are far from standardized on the Pacific Coast, each greenkeeper having his own pet ideas of turf feeding. However, most of them are agreed that high unit strength fertilizers are injurious in making over-developed grass plants which are more subject to the ravages of diseases. They also concur in the belief that it is better to err on the side of under-feeding than over-feeding.

Science and Golf Courses Work Together

Research which may have far-reaching effects on golf courses throughout the nation as well as affecting all forms of plant life is being conducted at Pasadena's famed California Institute of Technology. While this research as yet is far from complete and it is too early to make any definite announcements in regard to it, the principle being studied is the development of root systems by the application of vitamins. Working in conjunction with the Cal-Tech savants is a Southern California greenkeeper who is examining the possibility of using the vitamin substance to develop a healthy enough grass to resist the attack of brown-patch and other grass diseases.

Regardless of the results which may be achieved—and there is every reason to believe that they will be of far-reaching importance—this example of cooperation between science and the golf course is of significance that cannot be over-emphasized. A distinct movement toward larger and faster cutting units is also apparent. Power cutting green mowers are also becoming more popular.

The fight of greenkeepers against rodents and pests continues unabated, with honors just about even. The use of gas to control gophers and squirrels is being adopted more widely, as a more efficient gas is used for the purpose. Traps are still widely used because with them concrete evidence of their effectiveness may be obtained. And there is a certain sense of satisfaction to be obtained from seeing the troublesome critters caught. Various state and county bodies have adopted the use of thallium with wheat as a squirrel poison in eliminating the rodent over extensive areas. The highly effective procedure is to send a gang of men to fill in the entrances of all squirrel holes with dirt. A few days later when the "live" holes have been reopened, the poisoned

wheat is placed at the entrances. This prevents wasting the wheat on "dead" holes, or those not being used at present.

The sod webworm has increased its inroads on California golf courses, probably because the life cycle of the insect has been increased by warm weather and irrigation, thus making for several crops a year of the pest. Local greenkeepers owe much to Roy Campbell, entomologist for the Department of Agriculture, for his introduction of the dichloro-ethyl ether treatment, and also to Prof. Ralph H. Smith for his work in outlining the life history of the bug and methods of eradicating it. Golf course superintendents have been in considerable demand by owners of fine lawns who have been seeking advice on how to get *crabgrass leachella* out of their turf.

As for the greenkeepers themselves, a few are finally beginning to impress the golfing public with their importance because they have taken the first and most important step in this direction: they have come to realize their own importance. This has given them a new confidence and a new esteem in the eyes of the golfing public.

Annual Massachusetts State College Greens Course to Open Jan. 3

MASSACHUSETTS State college's 13th annual school for greenkeepers will open January 3, 1939, and conclude with an exhibition on March 10-12.

This course, the oldest of its kind in the country, was established by the short course dept. of the college in January, 1927. Professor Lawrence S. Dickinson was the founder and is the director. That the school has been successful is seen from the fact it lists among its graduates many now in charge of nationally known golf courses. Students have enrolled from 19 states, 3 provinces of Canada, and Bermuda.

As the full course requires 10 weeks, it has generally been found a certain number are unable to get away for the full time and therefore cannot take the course. To accommodate these men, the course this year will be divided into two terms of five weeks each. A student can take the first term in 1939 and the second in 1940 or later, but no certificate will be awarded until work is completed in both terms. No student will be admitted to the second term who has not completed the work in the first.

It is hoped that this division of courses will enable many more clubs to pay their greenkeeper's expenses, and by so doing make an investment that will pay high interest in better management of the golf course and better golfing conditions.

Enrollment in the course is limited, and preference is given to greenkeepers and their assistants. No one not familiar with the game of golf or not having knowledge of greenkeeping will be admitted.

Botany, entomology, water systems, drainage, equipment, grasses and turf culture, cost-keeping and analysis, managerial problems, soils, and fertilizers are subjects studied. There is also a daily forum or summary hour.

In addition to the resident staff of the college, Prof. Dickinson will be assisted by Carleton E. Treat, greenkeeper, Montclair CC, Upper Montclair, N. J. This will be Treat's fourth year at the school.

Tuition is \$5.00 a term, registration fee, \$2.50, and health fee, \$1.50 a term. Good board and room can be obtained from \$10 per week and up. Further information and application blanks can be obtained from the Director of Short Courses, or by writing Prof. L. S. Dickinson, M. S. C., Amherst, Mass.

Rutgers Short Course, Feb. 13-18—Annual short course in turf management at Rutgers university College of Agriculture, New Brunswick, N. J., will be held Feb. 13-18. This course is one of the older ones on the winter school schedule and is highly endorsed by greenkeepers who have attended it.

For complete details of the course write Prof. Frank Helyar, Rutgers U., New Brunswick, N. J.

SHACKAMAXON CC has an inside organization known as the Chickadees, who play throughout the winter. The Chicks become active two or three weeks after the regular tournament schedule ends.

Each week during the Chick schedule there are two prizes for low net scores and players are permitted to play as many times as they desire during the week. Winners each week are disqualified from winning additional weekly prizes although they are eligible for numerous season prizes. There also is a handicap championship tournament to determine No. 1 Chick.