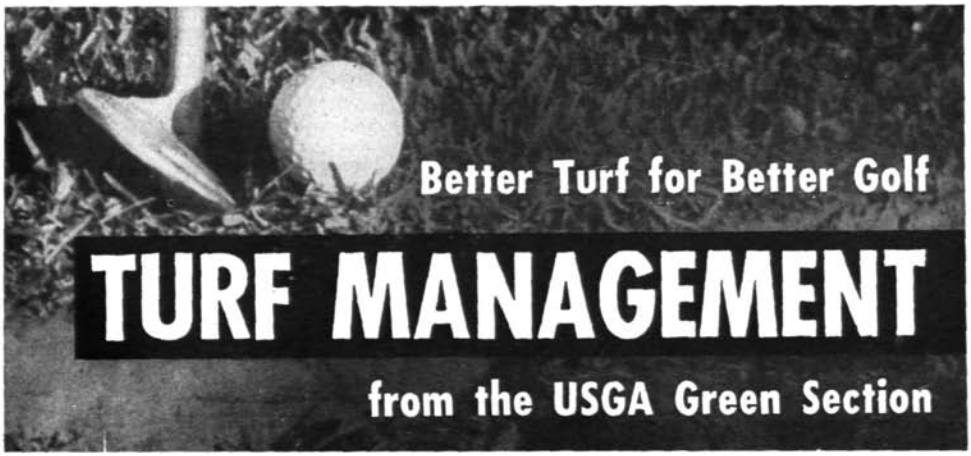

Correspondence pertaining to Green Section matters should be addressed to:
USGA Green Section, Room 307, South Building, Plant Industry Station, Beltsville, Md.

THEY AERIFY FOR BETTER TURF IN PHILADELPHIA

A contribution from the Philadelphia Association of Golf Course Superintendents
(WRITTEN EXPRESSLY FOR THE USGA JOURNAL AT THE REQUEST OF THE USGA GREEN SECTION)

Mechanical aeration of fairway turf started in the Philadelphia area in July, 1946, at the LuLu Temple Country Club. Aerification has since increased rapidly until it is now standard maintenance practice to aerify greens, tees and fairways, more than once a year. Facts pertaining to aeration are limited but for three years members of the Philadelphia Association of Golf Course Superintendents have met annually to discuss and summarize their experiences with mechanical aeration. At their last meeting they endeavored to determine the part aeration has played in efficient turf production by answering the why, when, how, what and who. The summary prepared for those present at the Conference is now shared with readers of the JOURNAL.

There was agreement that the introduction of air into the soil, which always seems to stimulate root growth, was a leading factor influencing the aerifying of turf several times a season. As the root growth increases from the additional air, the turf's drought resistance increases. Also, that increased root growth produces a better playing turf with a cushion effect.

Fertilizer and lime move more freely into the soil after aerifying, thereby giving greater return from the application of these two materials. With lime and fertilizer moving to a greater depth in the soil, the root growth increases, which in turn produces more organic matter in the soil. Perennial grass continually grows new feeding roots during the growing season while the older roots decay into organic matter; this process is hastened by the movement of air and water in the soil.

The thatched condition that keeps water from penetrating the soil is readily overcome by aerifying, which permits the water to reach the roots of the turf. It is the ability of the soil to take in the water and allow it to move freely downward without the plants becoming waterlogged that makes ideal growing conditions for grass. Aerifying and proper drainage are important factors in maintaining the proper soil structure.

Aerifying influences the water-holding capacity of the soil since it reduces the run-off. It is the openings made by the aerifier that allow heavy rainfall to enter the soil.

The result secured in reducing soil compaction was thought by many to be one of the leading assets of using the aerifier. A statement was presented by Dr. R. B. Alderfer, of the Agronomy Department of Pennsylvania State College, that the value of freezing and thawing for reducing soil compaction lasts only a short time each spring. For instance, golfers walking over the greens after heavy rainfall or irrigation will set back the improvement received from the winter's freezing and thawing.

There were expressions that the increased oxygen content of the soil resulting from aerification reduces disease. Joe Valentine, of the Merion Golf Club, reported that the aerifying of all putting greens in November, 1949, when he was getting the course ready for the USGA Open Championship, was a decided factor in reducing disease throughout the 1950 season.

Aerification is essential in any turf renovation program. It improves the soil condition and enables new seedings to become better established.

Fall is the ideal time for aerifying but the discussion brought out the fact it can be done at any time of year. Soil conditions should be right for aerifying, and all were of the opinion there was little injury to the turf if the turf was making strong growth when it was done. An application of fertilizer about ten days before aerifying speeds recovery.

Aerification should be done when it will least inconvenience the players. If aerification is done very early in the spring, when the grass is in the stage of changing from off color to green, players will hardly notice anything has been done.

E. R. Steiniger, Pine Valley Golf Club, reported: "Fairways were aerified as a regular maintenance practice. We aerified throughout the season, about six or seven times this year. Play was not stopped at any time."

Art Twombley, Pelham Country Club, said: "At Pelham in '49 there were three or four greens turning brown. Soil conditions were poor and it seemed certain the greens would be lost. The greens were aerified even though the temperature was 95°. The greens were handled carefully afterward; syringed every four or five hours. Aerification is done any time of the year it is needed. The entire course was aerified three times this year. Some of the greens were aerified four or five times."

No Increase in Weeds

Tees are important. Leonard Strong reported tees at Saucon Valley Country Club were aerified about every three weeks, starting in July.

The question was raised about aerification at the wrong time causing weeds. Ralph Engel, Extension Associate, New Jersey Agricultural Experiment Station, reported: "There has been no significant increase in weeds because of aerifying in the three or four locations where we have studies in aerification." Paul Weiss, Lehigh Country Club, commented: "Half of our practice fairway has been aerified spring, summer and fall each year, for the past four years. The other half of the fairway has never been aerified. Aerification is the only difference

HOW TO OBTAIN GREEN SECTION SERVICES

Advisory visits by USGA Green Section Staff members are available to USGA Member Clubs and Green Section Service Subscribers at $50 a day plus traveling and living expenses. Where two or more Clubs or Subscribers can be covered in one day, the fee to each is $25 and travel costs are shared. A written report is rendered to each.

There are advantages if the Green Section representative inspects as many courses as possible while in a given area. Golf associations and greenkeepers' associations can help their interests by arranging for inspection of groups of courses in their areas.

Those desiring advisory visits should make requests soon, as schedules for the season are now being arranged. Requests for visits should be addressed to:

USGA Green Section
Room 307, South Building
Plant Industry Station
Beltsville, Maryland.

Advisory service by correspondence is available to Member Clubs and Service Subscribers at no cost.

in management. I can see no increase in weeds on the aerified half over the unaerified half."

In discussing the "how," it was brought out that depth of cultivation should be as great as possible without unduly marring the surface. Even though the greatest amount of compaction occurs near the surface, deep cultivation is needed to encourage deep root growth. When cultivating heavy soil for the first time, it is not always possible to obtain deep penetration. Increased cultivation depth can be obtained in succeeding aerifications.

No special mechanical skill is needed to operate an aerifying tool, but the person who does should have an appreciation of the job to be done and the results to be obtained.

Practical work in aerifying is ahead of research. There are no prepared references to use as a guide in aerifying. Why, when and how to aerify are questions that can be answered only by experience and observation, with technical men pointing out the soil fundamentals involved. Golf course superintendents have had the most experience in aerifying. The free exchange of their experiences provides fundamental information from which aerification programs for other turf areas can be developed. Members of the Philadelphia Association appreciate the opportunity to pass along their ideas and look forward to hearing of the results obtained by others.

"TEMPORARY GREENS TODAY" OR "COURSE CLOSED UNTIL FURTHER NOTICE"

A contribution from the Middle Atlantic Association of Greenkeepers working co-operatively with the USGA Green Section Staff. Prepared by W. H. Glover, James E. Thomas, and Admiral Phillips, USN, Retired.

Do you recall when one of the above notices was posted on your bulletin board in the Golf Shop with similar signs on the first and on the tenth tees? It happens during the late winter season after a thaw when the greens are spongy and wet, or it could happen during the regular playing season after a very heavy rain.

The Middle Atlantic Association of Greenkeepers held their February meeting at the Plant Industry Station at Beltsville, Maryland. As the season had been one of frequent freezes and thaws, the need of closing the courses to play during such period, especially the greens and tees, was a subject that came in for much lively discussion. At this gathering, green committee chairmen, greenkeepers and the staff of the USGA Green Section represented a cross section of golf organizations in the immediate vicinity.

This group was in agreement with the general principle that alternate freezing and thawing, along with intermittent wetting and drying of the soil, produce a soil of proper tilth and crumb structure. When these conditions occur, contraction and expansion take place and the resulting pressure separates the soil particles and fills the top layer of the earth's surface with numerous pore spaces. This is one of nature's ways and means of cultivating the soil under turf. Through such action the proper balance of air, moisture and food can be regulated and made available to plants so they are able to live and survive. To be brief, they can breathe, eat and drink.

The arch enemy of everything good on a putting green is poor drainage. Excess water causes the roots of plants to suffocate and drown. When there is no oxygen available to permit the roots to breathe, the roots cannot absorb water and thus food becomes difficult or impossible to obtain.

How does golf affect the ideal playing conditions? It is very easy to explain. The foot traffic of players over a small