

SOMETHING ON FUNGI

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Fungi are placed with the higher green plants in our present system of classification. Such a classification, of course, tells us that many similarities exist. These similarities in turn will partially explain the difficulties we encounter in trying to control one plant while leaving another undamaged.

In a very wide sense, the main difference between higher green plants such as trees, shrubs and flowers and the members of the fungus family, is that the fungi lack chlorophyll. There is, of course, the extreme difference in size. Most fungi cannot be studied without the aid of a magnifying instrument of some kind. The lack of chlorophyll, however, is an indication as to why we are faced with devising control measures for fungi.

Since the fungus cannot synthesize its own food the way the higher, green plants can, it is forced to find a source of food. This is done in one of three general ways.

Many fungi obtain their food entirely from dead and decaying plant residues. They are active in destroying the fallen tree limbs, leaves, corn stubble, grass clippings and other organic remains. Another group may, at times, live on this decaying matter, but is also capable of attacking the higher green plants. A third group cannot break down the dead organic matter in order to obtain food. It lives entirely at the expense of the higher, green plant, obtaining its food from the living cells of the host plant. It seems it is the parasitism of these last two groups that the Greens Superintendents would like most to understand. Why? How? When? are the questions often asked.

Taking these in the order named, we find the "Why" explained by the fact that all life, particularly animal life, is dependent upon the manufacture and storage of sugars, starches and other foods by the green plant. The fungi, lacking chlorophyll, thus lacking the ability to manufacture their own food, utilize both plants and animals as a source of food. Why certain fungi choose a certain crop, such as bent grass, will remain an unanswered question. Many fungi have probably adapted themselves to one or more host plants over the centuries. Diseases have certainly been present for as far back as we can trace history. At least three centuries before the birth of Christ and in the Old Testament we can find distinct references to plant disease being a partial cause for crop losses and famines. It is doubtful that these organisms are identical to the one we find now. The fungus, with its rapid reproduction, very readily adapts itself to the higher yielding changed plants that we know today. The taking of Mother Nature's plants and concentrating millions of them in small areas would also aid the fungus in adapting itself and certainly solve its food problem.

The "How" has been partially explained by scientific workers. The fungus, upon entering the tissues of the host plant, is able to absorb some substances unchanged but must change some others before it can utilize them. In some instances, enzymes, secreted by the fungus, kill the cells and the fungus immediately feeds upon these dead cells. In some cases the fungus obtains food from the tissues of the host plant without severe damage to this host. This parasitism is interesting since the fungus requires the same nutrients as the higher green plant. Your fertilization of the bent grass may, in fact, aid the fungus. A possible example might be the suppression of Dollar Spot by adequate amounts of nitrogen. It is very possible that the fungus fills much of its need for nitrogen from the fertilizer, in

this case, and not from the grass.

The "When" has been worked out under controlled conditions. Parasitism of green plants is dependent upon many factors. In the field of turf diseases we find, however, that there are a few very important principles. The fungi, most of which are able to live very well in the soil, may be found at most any time. The bent grass is a constantly present factor. The very important variable factors contributing to disease are: temperature and moisture. Even these are complicated by other factors such as maintenance practices, insecticides, bruising or wounding and grass varieties. The weather, however, plays a most important part. Since the fungus and the grass are almost ever-present, we need only the proper temperature and humidity. Large Brown Patch, for instance, we know occurs only under the very high temperature and humidity conditions. The fungus is not able to enter the plant in order to obtain its food under other weather conditions. Many other examples exist. Certain diseases require specific weather conditions and do not occur if the proper weather is not present. Also, these conditions must often exist for a certain period of time.

But fungi are not always detrimental. Probably their most important function is the decomposition of the dead and decaying organic matter that would otherwise accumulate. The mushrooms are used as food, and many fungi are used in industry to produce materials such as beer, wine, leather, cheese and countless other important products. So — there is a good side to everything — even *Poa annua*. If Greens Superintendents didn't have *Poa annua*, they wouldn't know what to use for conversation.

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GERBER WINS MIDWEST SENIORS TITLE

Ray Gerber, shooting the best score of his life, a hot 39-38-77, walked away with the Midwest Seniors Championship, Monday June 22 at Bonnie Dundee. Ray played a steady game all the way thru and finished far ahead of his nearest competitor. Ray says that when he heard that the Championship was to be played, that he practiced day and night. In fact, Ray's 77 was second lowest of the day for the Seniors and the junior members both. The members thought so much of Ray's great game that at the meeting that evening a motion was made that the Midwest Association of Golf Course Superintendents send Ray to the National Tournament to be held in Miami, Florida in January with all expenses paid to represent us in the Seniors class. Pres. Davis ruled that as this was not a regular meeting, the motion was out of order but that the idea would be considered and brought up at a future regular meeting. Jock Anderson won the Seniors low net prize.

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THE OUTING AT BONNIE DUNDEE

Thirty five golfers turned out on June 22 on a lovely day to play Jock Anderson's superbly manicured acres. The greens were in such good shape that the boys were sinking them from all over the green. Forty men sat down to one of Jock's famous steak dinners in the evening and a social get together followed dinner.

Golf winners were as follows: Seniors Champ, Ray Gerber; Seniors low net, Jock Anderson. In the tournament open to the juniors as well as the seniors, blind bogey winners; 1. Bill Cummings, 2. Emil Cassier, 3. Joe Dinelli, 4. Don Strand, 5. H. Timm, 6. Julius Buchen, 7. Mike Polacci, 8. Bill Saielli, 9. H. Buchen, 10. Dick Buchen, 11. Charley Heckler, 12. Dom Grotti, 13. Warren Roseman.