QUESTIONS AND ANSWERS

All questions sent to the Green Section will be answered in a letter to the writer as promptly as possible. The more interesting of these questions, with concise answers, will appear in this column. If your experience leads you to disagree with any answer given in this column, it is your privilege and duty to write to the Green Section.

While most of the answers are of general application, please bear in mind that each recommendation is intended specifically for the locality designated at the end of the question.

Value and use of complete commercial fertilizers; disease control with fertilizers; sulphate of aluminum.—We are sending you a sample of a complete commercial fertilizer which is said to contain 4 per cent nitrogen, 12 per cent soluble phosphoric acid, and 4 per cent potash. We tested this fertilizer on a part of a practice green, and the grass on which it was used showed a wonderful growth. This green was attacked by small brown-patch, and the part of the green on which this fertilizer was tested was much less affected by brown-patch than the rest of the green, on which sulphate of ammonia had been used. It is claimed that on account of this being a complete fertilizer, it develops a healthy growth of grass and consequently lessens the severity of attacks of brown-patch. It burned the grass when applied at a rate of 3 pounds to 1,000 square feet, although it was watered in. Your advice that we use sulphate of ammonia to counteract the slight alkalinity of the soil is being followed with good results. We have suffered from several attacks of small brown-patch but have checked the disease with calomel and corrosive sublimate. Our neighboring courses have not had anything like the trouble we have had from brown-patch neither last year nor so far this year. We are told that sulphate of aluminum would create an acid condition in the soil. Your analysis of our soil showed a pH of 7.5, and you accordingly advised the use of sulphate of ammonia. Your advice in these matters will be appreciated. (Indiana.)

ANSWER.—We are familiar with the fertilizer of which you send us a sample, and there is no doubt that on certain soils it gives very fine results. For fertilizing fairways and occasionally putting greens a complete fertilizer—that is, one containing the three principal elements which plants require in their growth, which are nitrogen, phosphorus, and potash—is beneficial. On golf courses, however, the development of the leaf of the plant, and not its stem or fruit, is mainly desired, and the chief plant food required for golf turf is therefore nitrogen. Accordingly a complete fertilizer which is comparatively high in nitrogen content is preferable on golf courses. In the sample you send the nitrogen content is low in comparison with the phosphoric acid content. A fertilizer containing 12 per cent nitrogen, 4 per cent phosphoric acid, and 4 per cent potash would be more valuable for turf work. We consider the price of the fertilizer which you send us much too high for the plant food value contained. If you would ask any fertilizer dealer to prepare a fertilizer with a formula of 4-12-4, such as your sample, you would find that it would cost you much less than the sample in question.

Regarding the complete control of brown-patch with fertilizers,

we know of no fertilizer which will accomplish this result, although any fertilizer which will stimulate a healthy growth of grass will lessen the damage from brown-patch. It is quite true that turf is sometimes badly injured from brown-patch after being fertilized with sulphate of ammonia. This is often due to the fact that the nitrogen in the sulphate, being so readily available, produces a rapid growth, which temporarily weakens the plant and makes it more susceptible to disease. For this reason we recommend using sulphate of ammonia, or any other fertilizer, sparingly during brown-patch weather. Do not be too anxious to make your soil acid. The occasional use of sulphate of ammonia will gradually put the soil on the acid side, but it is the nitrogen in this fertilizer which is most valuable and not its tendency to make the soil acid.

Do not use sulphate of aluminum. It is quite likely to prove toxic to the grass. Besides, it can not be considered a fertilizer, as it contains none of the elements nitrogen, phosphorus, or potash, which are the known elements on which plants feed.

Early-morning watering in brown-patch control.—We do most of our watering from 6 until 11 o'clock in the morning. Some of our members are advocating watering only at night, arguing that the water is not evaporated so quickly during the night as during the day. Your suggestions would be appreciated. (Pennsylvania.)

ANSWER.—We are in favor of watering bent greens early in the morning during hot summer weather, when conditions for the development of brown-patch are the most favorable. During such periods the grass in the morning is usually covered with dew, and this is a condition which is especially favorable to the spread of the fungus. By watering in the early morning the dew is washed off the blades of grass, thereby enabling the blades to dry more quickly, thus serving the same purpose as switching or matting the grass. The drier the blades enter the night, the less damage will result from the brown-patch disease. It is true, other conditions being equal, that soil moisture evaporates much more during hours of sunlight than during the night time. However, soil moisture that is evaporated during the day time is to a large extent replaced during the night by the rise of free water in the soil by capillary attraction, provided the water table in the soil is not too low.

Arsenate of lead in the control of earthworms, grubs, and ants.—Is it advisable to mix arsenate of lead with two inches of top soil when planting stolons on greens? We have read several articles on this subject which claim this will do away with grubs, earthworms, and ants, using 5 pounds of arsenate of lead to each thousand square feet. (Wisconsin.)

ANSWER.—Arsenate of lead at the rate of 5 pounds to 1,000 square feet apparently can be mixed with the top layer of soil without any serious injury to creeping bent turf. It has been shown to effectively control grubs of the Japanese beetle and other grubs which live in the soil and feed on roots of grass. In many cases it has proved effective in controlling earthworms and certain weeds. However, there is little evidence available to show that it will prevent ants from infesting treated turf.

Science is a first-rate piece of furniture for a man's upper chamber if he has common sense on the ground floor. But if a man hasn't got plenty of good common sense, the more science he has the worse for his patient.

Oliver Wendell Holmes