Green Section Extension Work

By Kenneth Welton

Scientific discoveries and results of research work do not become of full value until they are placed in the hands of the practical men, the men who are to make use of them. Scientific information is frequently brought out in a most technical form and can not be understood by the layman. It often happens that a discovery in one branch of science may have an important bearing on a wholly unrelated field and may be overlooked unless there is some means for bringing such findings to the attention of all who may be affected. In the case of the Green Section we are particularly interested in keeping up to date on scientific work which may become of some service in golf course maintenance.

There are four ways in which the Green Section does extension work—by the Bulletin, by correspondence, by personal contact and meetings, and by demonstration plots.

The Bulletin has been published since 1921, and its popularity is shown by the fact that on our shelves at Washington we have only a few hundred Bulletins published previous to 1928. All the remainder of these thousands of copies have been sent out on application. A great many of the issues have long since been depleted. These were issues which dealt with subjects of particular value at the time. We have tried to guard against that eventuality in the future by increasing the publication by some 1,500 copies a month, which brings the total issue of the Bulletin to 60,000 copies a year.

The Bulletin is read by men who are interested in turf culture and is quoted in various manners. Its information is not only distributed by word of mouth, but it is interesting to note that several of the golf publications which have previously devoted their columns only to the game are now running columns on golf course maintenance and construction. That fact is particularly gratifying, since it shows that the golfer is beginning to realize the importance of the turf on the course and the problems which face the greenkeeper.

This last year you have probably noticed that we have run a new Bulletin series. We have attempted to bring up to date all past information on particular subjects; problems such as fairway fertilizing, putting green maintenance, golf course construction, water systems, and golf course accounting have been covered so far, and we shall deal with others in the future.

We have taken information from the past that still holds good, and put it all in one Bulletin, together with the most up-to-date information. Reading such a Bulletin may not be of particular interest to those who read the Bulletin only casually or to those who have no particular problem on their course and are only after general information. We have, however, received many expressions of appreciation from those who have been confronted with a particular problem that has been dealt with in this style. Readers find it convenient to have the information they require put out in one copy.

Our correspondence is a big item with our limited staff. We have estimated that over 500 letters a month are sent out from the Green Section. Forty per cent of these might be called routine, 20 per cent administrative, and 40 per cent are on queries regarding golf course maintenance problems. Of this latter 40 per cent, a large pro-

portion might be called problem letters. They are letters that show a real need for information on some vital problem of a course.

There are problems that we can not answer offhand, and we do not attempt to do so. We are fortunate, due to our close affiliation with the Department of Agriculture, in having available the best scientific information on various phases of plant growth. As an example of this, some club having difficulty with its turf may send samples of soil for examination. The sender suggests that the soil may have become poisoned by using the wrong fertilizer or chemical. The cultural methods used on the course are outlined and we are asked whether anything in the maintenance program is at fault. If it is logically a soil chemist's problem we go to the Bureau of Chemistry and Soils and get such experts as Dr. Schreiner, Mr. Brown, Dr. Skinner, and Dr. Fletcher, men who are studying soil fertility year in and year out, to assist us, and very often they are able to give us offhand the information we require. In any event, they are usually able to advise means by which a possible solution of the problem might be worked out.

If samples of seed are sent in we can have germination and purity tests made by the Department's seed laboratory, and when it comes to seed identification the expert advice of specialists such as Mr. Hillman, Miss Henry, and Miss Sirrine is most valuable. Mr. Hillman is an authority on seed of species of Agrostis, and his services are particularly valuable at this time, since there are so many different kinds of bents on the market. Mr. Lapham, of the office of soil survey, has been very obliging in making determinations of organic matter and soluble salts in soil samples. Our work with insect pests has been done by Mr. Leach, of the Bureau of Entomology. His work in controlling the grubs of the Japanese beetle, the June beetle, and other insects which seriously damage turf on some courses needs no further mention here. The identification of the fungi which cause diseases of grass, and the means of controlling them, were worked out by Dr. Monteith while employed by the Department of Agriculture.

I shall now mention a manner of doing extension work which is most satisfactory—namely, by personal contact. The Green Section staff is not wholly limited to Arlington, which is a good thing. Contrary to the opinion of some, we have an opportunity to observe turf culture and the results of various cultural methods over a large area.

This last year our limited staff—Mr. Westover, Dr. Monteith and myself—visited over 185 golf courses. These visits were for the purpose of conferring with the committees or greenkeepers, and we went as intimately into their problems as possible. These courses were to a large extent in areas of golf club concentration, but golf courses in such distant areas as Florida, Oregon, New Mexico, North Dakota, the State of Washington, Nebraska, Kansas, and even the British Colony of Bermuda were visited. Frequently information obtained on one course is of great value to another. I mention this because it shows not only that the Green Section service through personal contact includes a wide territory but also that we have an opportunity to make observations in widely separated territories.

The demonstration plots are the latest extension development. Apart from their experimental value, which has been referred to by previous speakers, they are decidedly useful from an extension standpoint. They are a most convenient place to hold meetings. Wherever

meetings are called for a certain district, the demonstration plots we hope will provide an opportunity for the gathering actually to see the turf from different grasses and to become familiar with their characteristics. Also opportunity is afforded to compare the results from different methods of culture.

The demonstration plots assist us with our correspondence and help in our extension work. For example, we frequently get letters asking such questions as the following: "We are about to re-turf our greens. What shall we put on them?" "Do you think that Washington or Metropolitan bent are the only grasses for putting greens?" "What is 'Cocoos' bent?" We can not take the responsibility of answering or advising a course to put a certain grass on the greens when there are a number which may prove satisfactory, but with the demonstration plots in different areas, planted on various soil types and under different climatic conditions, we can advise committees to visit the demonstration plot which is planted on a similar soil type and under similar climatic conditions to that of their property, and determine for themselves which grass they like best. Perhaps they might think German mixed bent would be the best, or perhaps they might prefer the Metropolitan strain of creeping bent. It is up to them to decide. They are representing their playing members. We hope that in the near future these demonstration plots will aid us in a similar manner on questions of fertilizers, weed control, and other turf problems.

Only this past season, although the plots have just been planted and we did not expect them to be of much use last fall, the arsenate of lead has shown results. People write in and ask, "Where can we see an example of arsenate of lead keeping worms out of greens?" Several of the men in charge of these plots have written in and told us it is wonderful how the arsenate of lead plots have kept out the worms. Worms may crawl in on the poisoned area and do damage before they are poisoned; but at the same time the control has been noticeable. This control with arsenate of lead has shown up most clearly on certain types of soil. Also we get questions on the possible toxicity of arsenate of lead to certain grasses. Clubs ask: "Do you think it would prove toxic?" "Are you sure that it would not injure our greens?" This work has not been carried on for a sufficient length of time on the demonstration plots for one to draw final conclusions; but it can be seen that the seed of various grasses has germinated and the seedlings are now vigorous on arsenate of lead plots. I do not wish to cause or create any impression that we expect that arsenate of lead will be toxic to any grasses. Mr. Leach's work is of long standing; but still there is doubt in some people's minds, and the demonstration plots will prove convincing. After seeing results of treatments of which they have been doubtful those in charge of golf courses will not be timid about applying like treatments on their courses.

I believe, in conclusion, that there are unlimited possibilities for further extension work by means of the demonstration plots, and wish to advise that those who are most keenly interested get in touch with their local demonstration plots. We have endeavored to place plots on several soil types in districts where more than one soil type exists, so any differences due to environment may be better taken care of.