A number of neatly made stakes should be in evidence for the support of certain plants. It is one thing to have such stakes stored away in some shed and another thing to have them already in position in case of emergency, such as heavy gales of wind, or rain storms. One may often be caught napping in this respect, and the result is sometimes disastrous. There may be some who might object to seeing unsightly stakes showing in the borders, but my contention is that it is more unsightly to see a whole lot of beautiful plants beaten down and oftimes broken with the loss of a season’s growth and flowers destroyed when a tie here and there as growth takes place might remedy the evil.

As each plant passes out of flower it is a good policy to remove any seed heads that have formed, this will relieve the plant considerably, as it is a well-known fact that the forming and ripening of seed or fruit takes more out of the plant than the bearing of the inflorescence, beside giving a neat appearance to the border.

Copious supplies of water should be given during dry spells, preferably in early morning or late evening, and this should be followed up when dry enough by loosening the soil to consume the moisture as well as to keep down weeds. Apart from the heavier watering, an overhead shower when the sun is off the border, or in evening during hot weather is very beneficial in expanding the flowers after the drying influence of wind and sun.

Selection of Flowering Plants

In making a selection of hardy perennial plants, it is well to bear in mind that there are a lot of really beautiful varieties that are practically useless for cutting purposes, so that where cut flowers are in great demand it would be well to discriminate between these and those of greater utility. The varieties are too many to enumerate here, although there are a few varieties I would like to mention as being very desirable, and which I have seen less frequently than others in our part of the country.

Chelone Barbata—Incarvillea Delavayi
Doronicum—Lobelia Cardinalse
Geum—Lathyrs
Heuchera—Sanguinea
Lychnis—Viscario—Splendens plena
Lychnis—Haageana.
Article V—Fescues and Rye Grasses

In this genus Festuca we find species both wild and tame but the following are the ones of interest to our readers.

Festuca Rubra—Red Fescue
Festuca Rubra Var. Fallax—N. Z. Chewsings Fescue
Festuca Ovina—Sheeps Fescue
Festuca Ovina Var. Duriuscula—Hard Fescue
Festuca Tenuifolia—Fine Leaved Fescue
Festuca Heterophylla—Various Leaved Fescue
Festuca Elatior Pratensis—Meadow Fescue

Red Fescue

The first two of the above enumerated species are of most importance to the industry of golf. The European red fescue and the New Zealand chewings fescue are considered by our botanists to be of the same species the slight difference in the plant being only varietal.

There is a great deal more Chewings used than European red fescue for several reasons the first of which is that there is more Chewings fescue produced.

Red fescue chewings variety is produced only in New Zealand. In its native country there is some doubt as to it being Festuca rubra. Those who know its history from the start claim that it is a variety of hard fescue. The grandson of the dealer who imported the first fescue into the southern islands and from which the present chewings developed claims that the original seed was hard fescue from Scotland. This history does not agree with the history given by Piper but the writer is inclined to believe that it is true. But as our botanists determine the plant as red fescue we have and must continue to think of it as such.
pean red fescue are slightly different in color and while it is extremely difficult and at times impossible to distinguish individual seeds yet to the trained eye the seed en masse is quite different. Then too the analyst can easily determine the origin because the weeds present in New Zealand chewings are quite different from those found in seed of European origin.

The wholesale prices this year have been about the same for seed of both origins. When there has been a difference the European red fescue has been cheaper.

The chewings fescue seed is heavier per bushel weight due to the absence of empty attached glumes and runs higher in technical purity and usually lower in weed seed contents. The average purity of chewings fescue is 99% while the average purity of European red is but 95%.

**Germination Improving**

There is a well founded prejudice against chewings fescue on the grounds of poor germination. During the last fifteen years there has been more seed used with a germination under 50% than with a germination over 50%. Good fescue should have a germination of 85% or better. The poor germination of chewings is directly traceable to the long and hot ocean journey. A great deal of work has been done to overcome the damage and it is gratifying to report that the shipments of the last two years have stood the transportation much better.

For fall planting it is possible to get seed of the new crop of chewings. There is now available new seed which left New Zealand in June and tests on some of the arrivals show the quality exceptionally good.

The germination of European red fescue is most always satisfactory and averages around 85%. For a period of over a year it keeps a constant germination: for example seed of 1927 crop which arrived last November still holds the same high and strong sprout germination as it did on arrival.

It would not be surprising next Spring to find that the imports of 1928 crop of chewings show a rapid decline in germination. Seed that now tests 85% or better in germination may next March show a weak sprout germination of but 30%. If there is one seed that should be perfectly tested before using that seed is chewings fescue.

**Sheeps and Hard Fescue**

Very little space will be given to those and the balance of the species. We purposely devoted most of the article to that species which was of the most importance.
Meadow Fescue

If it were not for the fact that thru accident or thru intentional adulteration the clubs sometimes get meadow fescue we would not mention this article as the species has no place on the course. It is strictly a field or pasture grass. The seed is much larger than the seeds of other fescues and is easily distinguished.

Meadow fescue has been used as an adulterant of rye grass when the price has been cheaper. Just at this writing the price is quite a little higher so if any adulteration was attempted it would be the other way. Meadow fescue has been used by some questionable dealers as a substitute for red and chewings. Just recently we ran across a fairway mixture which contained 25% meadow fescue. The club had ordered a mixture containing that amount of chewings. The price of meadow fescue at that time was 15 cents—the price of chewings 35 cents per lb.

Rye Grass

In this genus we find the following species that are of interest:

*Lolium Perenne*—English or Perennial Rye Grass
*Lolium Perenne Var. Pacey*—Pacey's Rye Grass
*Lolium Italicum*—Italian Rye Grass

These are coarse grasses and have but little use on the Northern courses. In the south, Italian rye grass is looked upon as a winter annual and is sown on Bermuda grass turf. It is also used on the Southern putting greens. For any purpose where rye grass is to be used one species is as good as another so the purchaser should therefore choose the least expensive, quality of course considered.

In the previous years our sources of supply were the British Isles, New Zealand and Denmark but during recent years quite a rye grass industry has developed in our own state of Oregon. This domestic seed is a mixture of English and Italian. The price has always been below that of imported seed. The imported seed is generally cleaner as a great deal of the domestic seed runs with a heavy weed seed content especially tarweed and rat's tail fescue but where clean domestic seed can be obtained there is no use paying a premium for the imported.

Pacey's rye grass is nothing but the small seeds of English rye. It brings a premium because of its small size.

Mid-West Meets at Bryn Mawr

Forty-five greenkeepers of the district were guests of genial greenkeeper Jim Bedoni August 6 at Bryn Mawr Country Club.

Many compliments were paid Mr. Bedoni upon the results which he has achieved during his seven years' sojourn at this course which was laid out and constructed by Langford and Moreau Ltd. The flat piece of real estate was moulded into a beautiful rolling terrain.

The original greens sowing was to fescue and bent. During the past few years the grass is being changed to vegetative bent by plugging. The progress is slow but the preferred bent will eventually cover the greens.

Following a luncheon served thru the generosity of the club, President John MacGregor called a business meeting. The first topic to be considered was the next Mid-West Greenkeepers' Tournament to be held during September.

The Walker Cup Team Matches were mentioned by Mr. MacGregor, greenkeeper of the Chicago Golf Club at Wheaton, Illinois, where these contests will be held, August 30, September 1 and 2. The suggestion that members of the association should patrol the galleries was approved. It was thought that about sixteen men would be needed for this service each day.
ONE of the greatest steps toward the advancement of turf culture is the movement toward the establishment of district experimental stations.

The importance of this movement can best be appreciated by those who not only have practical knowledge of the “science” of greenkeeping but vision as to its future as well. It is an astonishing fact that, although, golf has been played for nearly three hundred years, it has only been in the past decade that any attention whatever has been paid to the scientific aspect of greenkeeping.

The increasing popularity of golf as a pastime, needless to say, is directly related to the progress of greenkeeping. When courses were few and poorly kept, it was only to be expected that interest in the game was not very vigorous. It was a pastime for the few; now it is a sport for the many. Why? Simply because numerous well-kept courses now issue mute challenges to all who enjoy fresh air and sunshine to come and try their skill.

The growth in popularity of golf, also, is having its effect upon the progress of greenkeeping. Courses, which would have been accepted as satisfactory a few years ago, are now regarded as mediocre. Unkept courses are looked upon with contempt. Players now have many choices of links and naturally select those which are the most attractive.

Hit or miss methods of greenkeeping are rapidly becoming obsolete. The greenkeeper, whose methods are founded solely on precedent without some sound basis, will soon become as extinct as the Dodo. The greenkeeper, who does things the way he does because he has always done them that way and who refuses to keep abreast of the times, will soon be out of the picture.

IN THE present struggle for supremacy in the field of greenkeeping the importance of accurate knowledge is constantly becoming more evident. The greenkeeper needs a fundamental knowledge of the problems of his profession. The more profound this knowledge the more certain his success.

Until recently the greenkeeper was almost completely at the mercy of Mother Nature, who as you know, is rather whimsical. When he considered it the proper time of year, he sowed grass seed. This was usually of some variety to which he was partial. If the soil seemed poor, he fertilized it to the best of his ability with fertilizers, many of which were unsuited to the requirements of the soil. When the grass showed proper growth, he was delighted and took proper pride in his profession. When the growth failed to equal his expectations, he blamed the lack of results upon Mother Nature—instead of placing it where it belonged, on
himself. When the season was long and dry, he prayed for rain then cussed without restraint at the necessity of pushing heavy cumbersome mowers in the heat of the sun. Truly his days were full of toil and his nights were full of anxiety.

Vision of greenkeeping as a science instead of merely a means of earning a living by manual labor was first seen by a few pioneers. Everlasting credit must be paid to Dr. C. V. Piper and Prof. R. A. Oakley who brought their scientific knowledge of botany and agrostology into this field and opened a new era. The wisdom of these two men will reflect down through the ages of greenkeeping. Disregarding unfounded precedents which prevailed, they attacked the problems of greenkeeping from the standpoint of science. While they did not solve all of these problems, they laid a sufficient foundation so that it has been much easier for others to follow in their footsteps.

The Arlington Gardens at Washington were established as a result of their persistency and foresight. While chairman of the Green Committee of the United States Golf Association, Dr. C. V. Piper was an indefatigable worker and the fruit of his labor is now worthy of appreciation. To Prof. R. A. Oakley also belongs equal credit.

Although this experimental station has been in existence only seven years, its accomplishments have been noteworthy. Already it has made important findings in the methods of propagating vegetative bents, control of grubs and elimination of brown patch. Attention to these three problems alone would have justified its existence. However, it has been quietly devoting its attention to many additional problems many of almost equal importance.

While the accomplishments of the national experimental station must not be minimized, it is now realized that each local district has its peculiar problems due to varying conditions of climate, soil and geography. The solution of a problem in turf culture under conditions at Arlington Gardens does not necessarily mean that this problem has been solved for Maine or Texas. In many cases the findings merely lay the basis for further local experimentation.

**District Stations Given Impetus**

The movement toward the establishment of district experimental stations has been given impetus by the expanding vision of greenkeeping. With the growth in popularity of golf and the enormous sums involved in the
maintenance of courses throughout the country, it is only natural that the more progressive greenkeepers should awaken to their responsibilities. In a profession where errors in judgment are profoundly costly and waste may involve thousands of dollars to say nothing of club prestige, it is proper and fitting that the science of greenkeeping should be taken seriously.

Already several district experimental stations are functioning and it is to be hoped that before this decade is over there will be many more. Eventually there will be an experimental station for each city around which there is a group of golf courses. The metropolitan district of New York City is now solving many of its problems through an experimental station at New Brunswick, Ohio and Minnesota now have experimental stations and all states, with the possible exception of those sparsely settled, will follow suit, sooner or later.

The metropolitan district of Chicago soon will have its experiment station also, sponsored by the Chicago District Green Section and the Mid-West Greenkeepers Association. With over 200 courses in this area and more being added annually it is only fitting that turf culture should be given rightful consideration.

Plans for the establishment of this experimental station have been underway for some time and it will soon be a reality. In this accomplishment Mr. G. M. Peters, Mr. Joe Davis and Mr. Chick Evans of the Chicago District Golf Association have given the fullest cooperation to the Mid-West Greenkeepers Association.

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CLEVELINE FLAG SWIVEL
A bronze rust-proof wire swivel which may be attached to any wooden and to the Cleveline Steel Pole. This device will prevent the flag from wrapping around the pole. It can be easily attached by slipping the large loop over the pole and screwing the small loop in the top of the pole.

Optimism is not out of place when considering the possibilities of this experimental station. The development of turf culture is bound to be stimulated. Not only will it bring new knowledge to the profession of greenkeeping but it is expected to be a tremendously profitable investment.

Scientific and practical greenkeeping will go hand in hand in the future. The new station at Chicago will have a practical greenkeeper on its board of control. Special attention will be given to the practical problems of greenkeeping. The future of greenkeeping is limited only by the vision of those in the profession. Experimental stations, stressing practical problems as the Chicago station will do, cannot fail to stimulate interest and to assist in the promotion of golf.

Greenkeepers Please Note
Fraser's International Golf Year Book is the only publication containing a complete list of Greenkeepers. A complete buying guide. This 500 page book answers everything about golf Get your own copy—price $2.50. Address either Office: U. S. A. Head Office, 55 W. 42nd St., New York City Compilation Office, 1070 Blenner St., Montreal, Canada. A hundred-page supplement containing all Advertisements. The most used golf publication in the world.
Greenkeepers Visit Bunker Hill

By ROBERT E. POWER

NOT many greenkeepers own the golf course they take care of but Walter I. Kennedy of Bunker Hill, near Cleveland, has that distinction.

Mr. Kennedy entertained the Cleveland District Association of Greenkeepers at his picturesque place August 6, and proved himself a magnanimous host. The boys must have known what was coming for twenty-five members turned out in the intense heat to visit Bunker Hill, some of them driving sixty miles to get there.

After a gorgeous chicken dinner at noon the big table was cleared and President Fred A. Burkhardt introduced Mr. James A. Smith of London, Ohio as the speaker of the day. Mr. Smith is a soil and turf expert of national reputation and life-long experience, and an enthusiastic member of the National association as greenkeeper of the London Country Club.

Speaking clearly and slowly he traced the history of soil formations, the beginnings of plant life and the reasons why certain soils are better than others for turf growth.

"The time will come when we will build our putting greens in such a way that fine healthy turf will grow naturally and be almost free from disease," said Mr. Smith, "and we will not have to force it by artificial means as we do today.

"We must provide good drainage, and a fertile porous seed bed where the nitrifying bacteria can live and do their work. Then brown-patch will be forgotten."

Following Mr. Smith's splendid talk the secretary, Frank Ermer, read a preliminary draft of the new constitution and by-laws and members made suggestions.

It was voted to hold the next meeting at Pine Ridge on August 27. Also to invite the Detroit and Pittsburgh greenkeepers to visit Cleveland in September, as guests of the local association.

Inspection of the beautiful nine-hole course concluded the day's outing. Readers of the NATIONAL GREENKEEPER remember the troubles Mr. Kennedy had in building this course last year. His story entitled, "Canada Thistles for Putting Greens" appeared in the June number. The course is coming along in good shape and another nine holes will probably be added next year.

Among the unexpected, but welcome guests were Hiram F. Godwin, well-known greenkeeper and bent grass expert of Detroit, Gail T. Abbott head of the Barrett Company office in Cleveland, and Harry H. Bandy, secretary of the Cleveland District Golf Association.

The roll call was as follows:
Fred Burkhardt, Westwood Country Club, Rocky River, Ohio; Frank W. Ermer, Ridgewood Golf Club, Cleveland, Ohio; L. M. Latta, Braeburn Golf Club, Ghent, Ohio; A. Duncan, Rosemont Golf Club, Montrose, Ohio; R. F. Zechman, Ashland Country Club, Ashland, Ohio; J. D. Poole, Berea Country Club, Berea, Ohio; Wright McCallip, London Country Club, London, Ohio; S. M. Aldrich, Madison Golf Lakelands, Madison, Ohio; F. M. Dunlap,
What A User Says:
MacGregor Compost Distributor Co.,
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Gentlemen:
Two years ago I had the pleasure of visiting the Chicago G.C. Club, Wheaton, Ill., and I was deeply impressed with the methods used in getting the soils for top-dressing worked into the turf, by the use of a compost brush.

Having used several devices for working the compost into the turf, which have not given me good results, I tried out the MacGregor brushes, and I feel, owing to the good results which I have received from them, I should acknowledge my appreciation to you for the service that the two brushes which we received from you have given.

Yours truly, (Signed) John Morley, Greenkeeper.
Youngstown Country Club, Youngstown, Ohio

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Say you saw the ad in The National Greenkeeper

THE MacGREGOR COMPOST BRUSH

JOHN QUAILL SAYS:

The Greenkeepers of the Northwest have felt the need of a Local organization and on July 24, 1928, organized the Pacific Northwest Greenkeepers Association. This is indeed a fine thing to do and the members will get many very good things out of it for the little they will have to put in. A local association in every district will keep the greenkeepers in touch with all current subjects and problems and they will benefit by it.

Don't forget, February 13-16, 1929.
Place, Hotel Statler, Buffalo, N. Y.
What's doing—National Convention and Golf Show.

New application blanks will be mailed out shortly. Slight changes in the by-laws make this necessary. Any one who wrote in about application for membership will be taken care of very soon.

Pittsburgh is establishing two Experimental Stations in the Western Pennsylvania District to work in conjunction with the Green Section at Washington. One will be at The Oakmont Country Club where they have a clay soil and one at Allegheny Country Club where shale is the main part of the soil. With Emil Loeffler and John Pressler conducting these plots many interesting and instructive experiments will undoubtedly be tried for the benefit of those interested.

Lewis Evans of Cedarbrook is writing songs since the brown patch hit Philadelphia. His latest musical number is "The Golf Course Blues." The boys in and around Philly have had quite a time with fungus this year and several greens have been practically destroyed with little hopes of recovery.

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THE NATIONAL GREENKEEPER
September, 1928

GREENKEEPER'S
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SEPTEMBER

By JOHN MACGREGOR
Chicago Golf Club

Try and have all new seeding done by the 15th. This will assure a good root system before winter sets in. Always buy the best grass seed, it is cheapest in the end.

Vegetative bent greens planted now should be in fine shape to carry through the winter.

Now that August is in the discard for another year, we will breathe easier. There will be cooler nights, less danger of "Brown Patch", the grass will have gotten over its rest and take on a new lease of life.

Another light top-dressing will help the greens and tees. Mixing the fertilizer with the compost is a sure way of getting an even distribution. The compost absorbs the ammonia so that the chances of burning are very small. Keep the "Poa Annua" greens well nourished and watered.

Re-seed bare places on the fairways if you have no turf to patch with. Get the turf garden seeded for fairway patching and locate it where there is an adequate water supply.

There can be no set rule on which grass should be sown, the grass which gives the best satisfaction in your own locality is the best to use.

It may be necessary to water the fairways during the early part of this month.

There are still a great many who have not paid their dues for 1928. The first thing you do this month is, mail a check to the Secretary.

In the Chicago District

By EDWARD B. DEARIE, JR.

In a survey of a number of clubs in the district this year, I find that we have had our share of Brown Patch due to a very unusual summer. Our spring was very cold and dry until the last of May. Then we were visited with rains throughout the months of June and July.

During July rain fell on twenty-one different days. This was followed by intermittent spells of torrid weather. As a result of the climatic conditions prevailing during the first portion of the year, there is now much Brown Patch.

A number of new courses are now being built and contemplated and soon there will be 200 clubs in this district. Close-in sites are now a thing of the past and suitable property is continually rising in value. Those familiar with conditions agree with me that Chicago will lead the country eventually in the number and quality of its links. All offer an interesting diversity of greens study to the greenkeeper.

Our aim is to make the Mid-West Greenkeepers Association the largest unit of the National Greenkeepers Association and to co-operate with it in every way possible to advance the standards of greenkeeping.

Tournament Schedule

August 17-Sept. 1—Western Golf Association Amateur Championship, Bob O'Link Golf Club, Chicago, Ben Freberg, Greenkeeper.
August 30-31—Walker Cup Matches, Chicago Golf Club, Wheaton, III., John MacGregor, Greenkeeper.
September 5-9—California Golf Association Amateur, Del Monte.
September 8-15—Silver Totem Pole, Jasper Park, Canada.
October 5—Maryland Open, Baltimore C. C., Baltimore, Md.
October 5-6—Lesley Cup Matches, Winged Foot Golf Club, Mamaroneck, N. Y., John Elliffee, Greenkeeper.
November 23-25—Thanksgiving Tournament, Del Monte.
December 25—Santa Claus Tournament, Del Monte.

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