

THE GOLF COURSE

A MONTHLY BULLETIN DEVOTED TO THE DISCUSSION OF MODERN METHODS AS APPLIED TO GOLF COURSE CONSTRUCTION AND UPKEEP

Mowing Different Kinds of Putting Greens

By W. H. TUCKER, SR.

IF a barber were to employ the same methods on the bobbed head of a flapper as he does on the thinly covered dome of an old timer, he probably would not remain a barber very long. In the same way, should a greenkeeper mow an all-fescue or fescue-bent green in the same way as a green composed of red top and other grasses, then *he* ought not to remain a greenkeeper very long, unless, of course, he is ready to see the error of his ways. Maybe this article will help him to do so.

Both a flapper and an old timer know when to visit the barber. A greenkeeper should also know when to start mowing his greens in the Spring. If he is uncertain, nature provides a very sure guide. Forsythia, that popular shrub which is to be found in nearly all northern states, blossoms into a very beautiful mass of yellow flower almost before any of its leaves are formed. Directly this shrub is in full bloom is the time to start mowing the greens, no matter whether they are composed of fescue, bent, red top or other less desirable grasses. What does matter is the

method employed on the different kinds of turf.

Mowing all-fescue or fescue-bent greens.

In the case of all-fescue and fescue-bent greens, I strongly advise that the knives of the mowing machine, for the first half dozen cuttings, be raised $\frac{3}{4}$ inch above what is normal later in the season. This normal height I will call in future the regular playing cut. The raising of the knives will allow the young plants to gain sufficient strength to stand up under the closer cutting which is to follow. This "high cut" should be maintained for the first ten days or so, after which the knives should be gradually lowered $\frac{1}{4}$ inch at a time until by the end of the following week they are down to the level of the regular playing cut. From this time on the greens must be cut every two days, no matter what the growth of the grass. Without regular cutting, it is impossible to preserve the texture of a fescue turf.

On more than one occasion I have seen really fine fescue greens in a

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R. O. SINCLAIRE, *Editor*

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Editorial

GRASS seed mixtures continue to receive a great deal of attention. Most of this attention is from Green Committee Chairmen and Greenkeepers who have successfully used certain grass seed mixtures for a long period of years. We say successfully used, because we cannot conceive of anyone purchasing over and over again seed mixtures which have given unsatisfactory results.

Despite the propaganda spread by those who term all mixtures "mysterious" and "miserable," we, and other commercial houses have repeated requests to furnish mixtures for putting greens and fairways, rough, and bunker-sides—the same mixtures as were supplied in previous years. This is a demand which will continue so long as suitable mixtures, which produce good results, are offered on the market. There are, however, bad mixtures as well as good mixtures, and if the consumer cannot put full confidence in a seed house, we agree that individual varieties of seed should always be purchased, and never mixtures.

We do not champion the cause of the mixtures, neither do we attack it.

It should make no difference to the seedsman whether he sells individual varieties of seed or a mixture. The profit on the seed the consumer receives should be the same, whether

the seed is mixed or the varieties delivered separately.

With a little careful study of seedsmen's price lists and catalogues, the buyer should be able to know just about what percentage of the different varieties of seed the seedsman uses in his mixtures.

There is really nothing mysterious about the mixtures which reliable seedsmen market today, for any honest seedsman will tell his customer just what a mixture contains.

If a seedsman is offering Chewings New Zealand Fescue, for instance, at 75c per pound, Mixed Bent at \$2.25 per pound, and Fancy Recleaned Red Top at 35c per pound (considering these varieties as the proper constituents of a putting green mixture), the buyer should realize that if the same seedsman advertises a putting green mixture at 60c per pound, he is not including in the mixture a suitable percentage of the high priced species, i.e., New Zealand Chewings Fescue and Mixed Bent.

Taking as a basis the prices quoted on the individual varieties, and assuming that a putting green mixture should contain, say 70 per cent. New Zealand Chewings Fescue, 20 per cent. Mixed Bent and 10 per cent. Red Top, the mixture should cost approximately \$1.00 per pound. The cost to the seedsman of mixing the seed is a comparatively small item, and to cover it he is not justified in charging more

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PROFESSIONALS and greenkeepers frequently request us to advise them where they can secure situations. We shall be glad to furnish the names of competent men.

Golf Clubs We Have Financed

By O. W. M.

THERE has been a great deal of talk during the past few months on the subject of the high cost of Golf Course upkeep, and, indeed, the excessive cost of the game from all points of view. To the writer it seems that a great deal of the criticism is justified, at least insofar as the general proposition is concerned.

However, when the details are approached, there is entirely too much loose talk, and too many attempts are made to lay the blame at the door of the long suffering seedman, who is, as a matter of fact, only endeavoring to obtain the legitimate return for his labor to which he is justly entitled.

It has long been a part of the writer's work to try to secure payment for shipments of materials to Golf Clubs all over the United States, as well as in Canada and countries to the South. In the course of this work he has, at one time or another, been in contact with practically every club of any account in that territory. This experience leads him to make a number of observations about the financial policy of the average club that ought to be brought to the attention of the Directors of every club in the country, with a view of setting their house in order wherever the remarks may fit the individual case.

First of all, it is not departing from the facts when the statement is made that about 90% of all the clubs in the United States and Canada are either poor or bad credit when it comes to paying the seedsman. In fact, out of the clubs listed in the last issue of the American Annual Golf Guide, containing probably 1700 or 1800 names, it would be amazing if 100 clubs could be found that would warrant a good commercial rating. The rest are poor, bad, or—well, the dictionary doesn't have any word that would quite fit.

Second, it is this condition that is largely responsible for the fact that the seedsman is compelled to ask more for his wares than would otherwise be the case. The extra expenses are appalling. There is more work in the bookkeeping department, meaning more clerks; there is more work in the collection department, meaning still more employees; more loss in carrying charges, and a tremendous loss through not having enough hard cash on hand when an opportunity to make a favorable purchase presents itself. All these unnecessary wastes added together make a very important percentage of the retail prices that must be asked, and the blame for the extra cost to the customer rests solely on the shoulders of the responsible officials of the clubs.

Some time ago, there came to our notice a letter written by a certain District Association which has made a practice of supplying its members with seed at alleged low prices and great savings. (It is to be noted that the sales were made on terms of either sight draft as B/L or express C.O.D.) Listed on the letterhead were the names of the clubs which were members of the Association. Since many of them were immediately recognized as notoriously slow about paying their accounts, the writer decided to examine the record of each to see just how bad conditions actually were. During the past two years, business had been done with 24 of the clubs on the list.

Every invoice in each account was listed and the exact number of days that had elapsed from the date of shipment to the date of payment. These times were then averaged up for each club and then for the entire group. The results were as follows, the amounts being fictitious but in correct proportion to each other.

Club	Amount Purchased	Days taken to pay	Days Overdue
A	\$1127.04	612.72	582.72
B	557.09	57.07	27.07
C	44.41	43.00	13.00
D	231.20	43.98	13.98
E	211.86	30.00	0.00
F	165.50	121.00	91.00
G	99.00	155.00	125.00
H	20.95	126.81	96.00
I	635.07	114.97	84.97
J	76.10	20.00	0.00
K	304.50	40.98	10.98
L	514.00	70.58	40.58
M	1818.05	98.27	68.27
N	4690.00	175.07	145.07
O	1243.25	190.37	160.37
P	2658.43	157.34	127.34
Q	4133.25	95.30	65.30
R	286.45	42.31	12.31
S	189.62	48.05	18.05
T	12.85	32.00	2.00
U	6340.35	721.77	691.77
V	766.49	13.92	0.00
W	1985.60	91.96	61.96
X	1599.87	537.53	507.53
GRAND AVERAGE		289.11	259.11

In other words, the average length of time the seedsman had to wait for his money was more than *nine and one-half months!* Or, from the time the seedsman sent out his salesman and his service man and had started giving value to the club with the hope of a fair return for himself, he had to wait almost a year for collections to come in.

Only three on the list had so arranged their affairs that they were able to pay promptly within the 30-day period allowed by the terms of sale, and the experience of years prior to those taken into consideration above would lead to the belief that this was due either to the fact that the amount involved was trifling or to some purely transitory condition.

If the data for a five-year period were tabulated, practically all would make a worse showing. In some instances there were not a sufficient number of transactions during the past two years to warrant giving some of the clubs as high a rating as the table would indicate. Naturally, further credit has been refused to several of the clubs on the list, and they are now sold only for cash.

It is the firm belief of the writer that the principal reasons for the dilatory methods of most clubs are laziness and incompetence in the offices of the clubs, lack of attention to getting out house accounts promptly on the first day of each month, failure to follow up the members to see that

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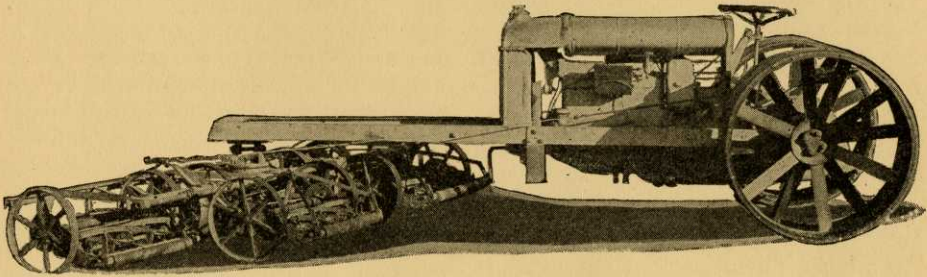
Fairway Mowing Equipment

By H. T. Coldwell

WHEN golf was introduced in America the only method of mowing the fairways was by the use of the old-fashioned, horse-drawn lawn mower. These machines were constructed with a heavy roller as wide as the width of cut and were drawn at a rate of about two and one-half miles per hour. From this statement, however, it must not be supposed that an actual distance of two and one-half miles was cov-

attachment. They were very popular for a time on account of the greater amount of work they could do, but the constant rolling of the turf soon packed it so hard, particularly in warm, dry weather, that very few courses could stand the treatment.

To obviate these bad features the "Triplex" style of mower was introduced. These were really three 30-inch mowers attached to a frame and cut a swath about 84 inches wide.



The "FAIRWAY FORDSON"

The most modern type of mowing equipment for the fairways.
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ered, for such a rate of speed would be an impossibility for a horse to keep up and a rest of at least 10 minutes per hour was necessary. The width of cut averaged about 35 inches and one of these mowers had a cutting capacity of about half an acre per hour. Mowing an 18-hole course with these mowers was a slow and expensive procedure.

Following these horse roller mowers the "Ride Type Motor Mower," cutting a swath 40 inches wide, was brought out. This machine traveled about five miles per hour and would mow about an acre or an acre and a half per hour. They were very heavy, being practically a miniature "steam roller" with a lawn mowing

The mowers were an enlarged Hand Mower without rollers and were horse drawn. It was possible to mow about an acre and a quarter per hour with them, but, being much heavier than the old style horse-drawn mower, they were very hard on the horse. The use of the motor mower showed the advantage of the motor over the horse, hence the "Tractor" mower found a ready market.

A "Walk Type" Motor Mower, similar to the old-style horse mower with a motor attached from which the power was derived, came out about this time. The operator walked behind to guide it. Such a mower was quite desirable for medium-sized lawns, but could not compete with

Ride Type Mowers for cutting the grass on fairways.

The next mower was a tractor-drawn affair pulling five 25- or 30-inch old-style horse mowers and cutting a swath about eleven feet wide. They had a capacity of about five acres per hour and would easily mow an 18-hole course in two days. This machine combined all the bad features of its predecessors, constantly rolling the turf the full width of cut every time the course was mowed, with the additional feature that the tractor preceded the cutters and had a tendency to roll down the grass before the mowers could cut it. It was a great gain, however, over all previous methods of mowing large grass areas.

The latest and most improved method of mowing fairways is with the Tractor Pushed Mowers. This machine is operated by a standard light tractor and the cutting units are placed ahead so that the grass is cut before the tractor wheels have a chance to roll it down. The same type of mowers are used in this machine as were used on the "triplex" mower, namely side wheel mowers without the heavy rollers attached. The tractor wheels cover about 38 inches of turf while the width of cut is about 11 feet so it would require three or four times over the ground before the tractor had had a chance to roll it completely once. This infrequent rolling is good as it has a tendency to iron out worm casts and other upheavals. These machines are simple to operate, economical as regards fuel and lubricating oils and much cheaper in the first place than any other outfit of equal capacity. Using a standard Fordson tractor, repairs and replacements when required are always within easy reach.

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they pay these accounts promptly, neglect by the responsible financial officers in signing checks when ready, and failure of these officers to install some efficient system for handling financial matters. Lack of foresight in purchasing more than there was any possibility of paying for promptly rarely is a factor in slow payment of accounts by clubs.

The results of this investigation led to a similar examination of the accounts of clubs in other localities. These were selected at random, the only qualification being that we had had at least five transactions during the same period of time as covered by the above list. The results are not yet ready for comment, and will be covered in a future article in this paper. However, one notable fact came to light which is especially pertinent to the remarks in the last paragraph.

There is a certain long established Golf Club located near one of the large centers of population, its membership composed of the wealthiest men in the city. For many years materials have been supplied to this club. For the two years prior to last year it took an average of 95 days to pay invoices for material. About a year ago, a new set of officers were installed, including a new Treasurer. Since that time, their checks have been in our office within *seven* days from the time the bills were put in the mails. Why was this, and how was it that payments were never prompt before?

It is almost too obvious to merit comment that if it were possible to persuade all clubs to conduct their affairs in such a way as to enable them to make their payments in this manner, prices of materials could be reduced by a heavy percentage. Why, then, blame the seedsman when the clubs neglect to hold up their end? It is high time a radical change was made.

Ants

By D. I. SEWALL

AMONG the many pests and annoyances that a greenkeeper has to contend with in caring for his greens, are Ants.

While they are not as troublesome as many other pests, they are a cause of worry and must be exterminated by some means or other. There are several different types of Ants, yet to the average man Ants are just Ants. This article is not a treatise on the social life of the Ant, yet it may perhaps be of interest to describe very briefly the several different types and their habits.

The type of Ants which are commonly found building their homes on a golf course, and particularly on putting greens, generally throughout the United States, are the common *Formicidae*—the little brown Ants about $\frac{3}{16}$ of an inch in length, of the genus *Lasius*; the small red Ant—*Monomorium Pharaonis*, and the larger type black or Carpenter Ant. There are several other varieties, among which may be mentioned the "Driver Ant," *Anomma Arcens*; the "Foraging Ant," genus *Eciton*; and yet another type, called the Texas Harvester—*P. Barbatus*.

To the same family as the Red Ants belong the Agricultural Ants of Texas and the Southwest. They are found in Florida and other parts of the southern United States and build very large underground nests.

Having noted briefly several types of Ants, let us now consider for a moment their general habits without going too deeply into their social life. Let us consider as a typical example, a colony of White Ants, which is founded by a King and Queen—a very fruitful pair. The Queen when fully established in her home is truly termed the mother of her subjects, producing nearly 80,000 eggs in each 24 hours, so it behooves the greenkeeper when trying to get rid of this

pest, to be certain of "getting" the Queen or else his labors will go for naught.

In cold weather Ants hibernate in the adult state in a dormant condition. In early Spring, when the weather begins to get warm, they leave the nests in which they are born and "swarm." They fly about for a short time, then mate and start new colonies. After a new colony has been started, the Queen Ant begins producing her eggs. After the eggs are laid it takes about a month for them to hatch. Helpless grubs are then produced. In another two weeks these are full grown. They then spin either a cocoon in which to change to *Pupae* or change directly without such a covering.

These cocoons or *Pupae* are what are known as "Ant eggs." You have undoubtedly seen Ants carrying small white objects in a seemingly aimless manner around the base of an Ant hill, and if you had examined them closely they would have proven to be these eggs. They will be found in mid-summer in almost any colony of Ants. The adult Ants hatch directly from these eggs and at once take part in the work of the nest, that is, if they are "workers."

The food of all Ants is both animal and vegetable. They are all fond of sweets, especially sugar—some species even gather honey like the bee family.

Many a greenkeeper has tried exterminating Ants with a mixture of borax and sugar, but the results often prove contrary to what was hoped for. The Ants were attracted by the sugar and seemed to get fat on the borax, so this method of extermination is not infallible.

Many remedies have been tried with varying success. That which has proved infallible is a treatment of Bi-Sulphide of Carbon. Care should be taken, however, when using Bi-Sul-

phide of Carbon, either alone or in a mixture. If used too strong it will kill the grass. It is also highly explosive.

A very effective method to destroy Ant hills in fairways or in any location other than on putting greens, is to pour 2 or 3 ounces of Bi-Sulphide of Carbon into a hill and then explode the vapor by touching it off with a lighted match fastened to the end of a long stick. The explosion not only destroys the hills but drives the fumes down into the deepest chambers of the nest, kills the live Ants and buries the larvae and pupae so thoroughly that they can never make their way to the surface.

This method, of course, could not be used on a putting green as it would destroy too much of the existing turf.

A very efficient method to be used on putting greens is as follows:

Mix $\frac{1}{3}$ Bi-Sulphide of Carbon and $\frac{2}{3}$ Lemon Oil Insecticide. Add to 1 gallon of this mixture, 1 gallon of water. Mix it thoroughly. Saturate small pieces of cotton-batting, approximately 1 to 2 inches in size, with the liquid. Stuff this into the Ant hole and immediately press the Ant hole down with the heel in such a manner as will close the hole at once. The fumes of this mixture will penetrate downward and should in a short time effectively get rid of the ants. It may be necessary to repeat this once or twice during the season.

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than a cent or a fraction of a cent per pound additional.

If Mixed Bent is not included in a Putting Green Mixture (and it is often impossible to include it because of the great scarcity of this seed), a good mixture would in most cases be composed of say 80 per cent. Chewings New Zealand Fescue and 20 per cent. Fancy Recleaned Red Top. Again taking the above prices on individual varieties as a criterion, the price of

this mixture would be 67c per pound. In the same way it can be figured out quite closely just what varieties of seed the seedsman includes in his other mixtures.

To sum up the situation, the consumer should always judge the seedsman's prices by quotations on individual varieties and not be influenced by a low quotation on mixtures.

Mixtures can be made up at a very low cost and sold at a very big profit, and the purchase of such mixtures is the greatest extravagance which a Club can indulge in.

From the above it can be easily seen that if the seedsman is honest, it makes no difference to him whether he sells a mixture or not, and there is no reason for a good seedsman to urge the purchase of his mixtures, except that in most cases the buyer does not know as well as the seedsman just what grasses will produce the best results.

We believe, as do most others, that New Zealand Chewings Fescue, European Red Fescue (when stock of true strain is available), and Mixed Bent or Colonial Bent are the best grasses for a putting green. We do not believe as a rule in sowing new greens with Fescue alone, or even Bent alone, and in this we disagree with certain authorities. Our experience has been that it is more satisfactory in most cases to use Fescue, Bent and a small percentage of Red Top, as a cover crop, in new seeding. When Bent is not available, which is often the case, we usually recommend approximately 80 per cent. Fescue and 20 per cent. Red Top.

The reason for this discussion of mixtures is to make it perfectly clear to all of our customers that we are always glad to tell them exactly what our mixtures contain, and how we arrive at the prices we quote on our mixtures. It is also our idea to let them know that it pleases us just as well to sell individual varieties of grasses as to sell mixtures.

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deplorably coarse and wiry state, due entirely to the fact that they were not mown early enough in the Spring. The result has been that the undergrowth has developed a brown, unhealthy appearance, which has prompted a rush to the fertilizer bag to restore the color. The color can be restored by fertilizing but the texture can only be restored after weeks of constant cutting. Fertilizing will actually aggravate the situation, and the greenkeeper's slogan should be starve the grass and cut it and water it regularly.

Red Top, Blue Grass, Poa Annua, Clover, etc.

In the case of a mixed green composed of the above grasses, I specifically mention clover because it thrives with such grasses. Greens composed of these grasses are usually coarse in Spring, and for this reason it is advisable to drag-mat them or give the turf a light scratching with a rake. This treatment will enable the blades of the red top and other grasses to stand up, at the same time bruising and thinning out the clover patches, thus permitting the finer grasses to tiller out and mature.

For the first cutting of these mixed greens, it is advisable to cut very close in order to catch the coarser red top blades and clover heads. If the green is inclined to look thin after this treatment, it is a good time to seed and top-dress in the manner described in my article of March 25th. If, however, the green appears, after raking, to be in good health and of dense growth, it should not be cut for two days, after which the knives should be raised $\frac{1}{4}$ inch above the regular playing cut and maintained at this height for one week. From then on, that is after the bottom growth and young grass have acquired sufficient strength to stand close cutting, the

knives should be set down to the level of the playing cut.

To catch the cut grass or let it fly?

In the case of fescue and bent greens I strongly advise that the clippings be caught every other day until the end of May, after which date until the end of September the clippings should be allowed to fly except on wet days. This is important for if the clippings are allowed to fly when the grass is growing strong and is naturally very succulent, excessive grass clippings are liable to lie too close to the roots with the result that should moist weather be followed by hot humid weather, the clippings will quickly decompose, ferment and provoke aldehyde, mildew, fungus, etc.

With mixed greens of Red Top, Blue Grass, Poa Annua, White Dutch clover and possibly Crested Dogstail, the question of using the grass catchers is entirely different, though the procedure is more or less the same. The blades of these grasses are not so fine or hard as those of fescue and will dry up more rapidly. The cut grass will not stick to the surface so much and will be forced up by the rapid growth of these coarser grasses. But even so the clippings should be caught until the end of May. The greens should be mown every day during this period and will probably produce from four to five boxes of clippings (about 20 to 30 lbs.) at each cutting. Such a quantity is altogether too much for a dry mulch. Moreover this is the period during which Poa Annua forms its seed stems, flowers, ripens and in two weeks is blown broadcast over the course. By catching the grass during the seeding period the growth of Poa Annua is naturally retarded.

An all-Poa Annua green is not to be despised but it is expensive to maintain. It has a way of slumping after the seeding period and becoming weak and thin in July, thus allowing clover and crab grass a chance to get a hold.



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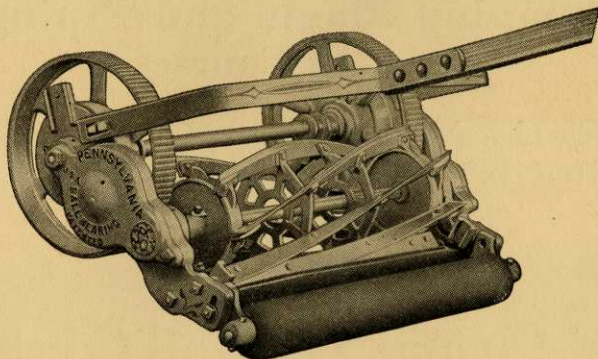
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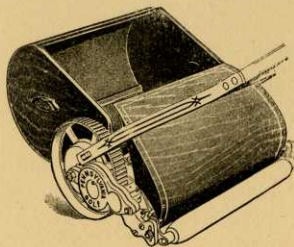
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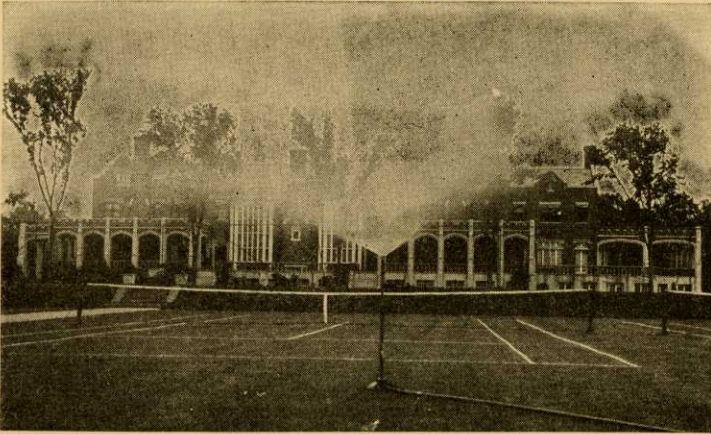
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