"Last year on the Fourth of July our greens and fairways were beginning to go—sod drying out, and the grass losing its spring. A month later nobody wanted to play on a tinder-dry course.

"This year, drought or no drought, we're going to have a real course. A Fairbanks-Morse deep well turbine pump provides all the water we need—and at remarkably low cost."

For full information on Fairbanks-Morse pumps and how they make any course independent of adverse weather conditions, write today for your copy of Bulletin E141. Address Fairbanks, Morse & Co., 900 S. Wabash Ave., Chicago, Ill. 34 branches at your service throughout the United States.
CONSIDERING the public money being invested in municipal golf courses, it is obvious that many towns and cities are going to wake up some day and find that in their new golf courses they have civic assets that have great advertising value. When they get around to studying how a community can make a fine advertising medium of its muny course, they probably will end by giving thought to the job done at Harlingen, Tex., where Claud Liston, manager, Tony Butler pro and Ansel Gross, greenkeeper, and every employee and man and woman player at the club become an energetic advertising man for Harlingen.

On the letterhead of the club appears ballyhoo about “sweetest grapefruit” and “juiciest oranges” and information that here in “the lower Rio Grande valley of Texas golf is played 12 months of the year.”

And how those fellows write letters! You get letters and picture postcards from Harlingen on the slightest provocation or on no provocation at all. Register from out of town for a round on that course and you are sure of mail that tells you you’ll be missed if you don’t hurry back.

To get the spirit of the Harlingen community boosting from a typical Liston letter, read this presentation of the highlights of the place:

“Our series of Scotch tournaments during 1936 had as the secret of their success the Leap Year element. They have been increasing in size steadily; the last one held having more than a hundred entrants.

“You see, when a good looking woman player invites a golfer to play with her, he is on the spot. To be chivalrous, as all Southern men must be, he is bound to accept regardless of whether he or she “can crack an egg.”

“And after they have played once, you can’t keep them out. In fact, most of the entrants are and have been for some time, dated up for these affairs through December. The set date for these events is the third Sunday in the month, usually followed by a picnic supper in and around the club house.

“We have two large tournaments every year; the women’s Rio Grande Valley championship and the Rio Grande Valley Amateur golf championship. This is always scheduled for the Saturday, Sunday
Here . . . at last . . . is the perfect golf ball washer! Cleans one or two balls at a time . . . faster . . . and without splashing! Two over-size brushes, with genuine palmetto bristles, rotate in opposite directions to wash off all dirt . . . actually scour the balls clean. All grime, dirt, and grass stains disappear like magic . . . without affecting the finish of the balls. Allied Two-Ball Washers speed up play on the course because they are faster . . . are preferred by players because they are easy to use . . . and absolutely splash-proof. Send handy QUICK-MAIL coupon today for complete details and prices. Despite extra-substantial construction, Two-Ball Washers are not expensive . . . and first cost is last cost because they are sturdily made of heavy, cast aluminum, rust-proof and wear-proof. This economy places them within the means of both private and public courses. Send QUICKMAIL coupon No. 7 today!

ALLIED GOLF CORP.
Manufacturers of
CLUBS . . . BAGS . . . BALLS . . .
4528 Fullerton Avenue ☞ Chicago, Illinois
and Monday of Labor day in order to take advantage of the triple holiday which allows the working men time to play. The final in the championship flight is played on Tuesday.

"And here's something about our tournaments for Believe-It-Or-Not. We claim it as a record and as yet have never been challenged. Since the inauguration of the Rio Grande Valley Amateur golf championship tournament, a champion has never repeated but has always been runner-up the following year. Neither has any town had but the one champion. The year 1936 was no exception.

"This tournament has grown to well over a hundred entrants, with players competing from all over the state.

"Our golf course is unusual in many ways, but perhaps one of the most noticeable is the great percentage of women players. The ladies have their golf club with a luncheon and business meeting every month followed in two days by a tournament. A great many of these women were beginners at the start of the club but most of them have brought their handicaps down in amazing fashion which accounts to some extent for the popularity of the aforementioned Scotch tourneys.

"Our golf course is in better shape in the winter than in any other time, although we are blessed with good golf weather twelve months of the year. People from all over the country are finding their way down here for the winter, and golfers who have spent one winter season with us always come back. Our greens are always really green. They never freeze and a light frost is promptly counteracted by watering and care.

"Ask Walter Hagen and Joe Kirkwood what they think of us down here. In a special match here, which they lost to Tony Butler and Dick Turner, then the Rio Grande Valley amateur champion, three and two, they were followed by a gallery of more than four hundred paid admissions; this in a town of twelve thousand.

"A few weeks later Craig Wood and Henry Picard met with the same experience playing against the same two boys, losing the match three and two, also.

"This was Kirkwood's second visit here. As we said before, we have only to get them here once and they always come back. We really don't have to brag about the Lower Rio Grande Valley of Texas, garden spot of the world, because our visitors and friends do that for us."

**Claims Driving Ranges Are Great Incubators for Golf**

WALTER KELLER, Chicago pro who has been making a fine profit as a practice range operator, remarks that new ideas and good management at practice ranges will develop many new golfers. Operators of numerous better grade ranges in the Chicago district meet informally twice during the season and discuss their work.

The customary rates in the Chicago district are 50 cents for a bucket containing about 72 balls and 30 cents for a bucket of about 37 balls. A newspaper promotion idea of free lessons for kids was prematurely announced and swamped the ranges. This experience sold the range owners on the wisdom of planning their promotion well in advance.

Keller suggests that range owners tell of their experiences and most effective ideas in **GOLFDOM**, thus bringing to the notice of the entire golf field what an important part the practice ranges are taking in golf promotion.

**Minnesota Short Course Planned**—Greenkeepers' short course will be held at University of Minnesota, dept. of agriculture, from March 1 to 5 inclusive, according to Prof. C. O. Rost, head of the department’s Division of Soils.

In addition to the usual lectures and discussions on turf culture and greenkeeping theory, the course will include two laboratory periods on Gas Engines, a lecture on golf courses as game refuges, and two discussions of golf course cost accounting.

For complete information, write Dr. Rost in care of the Dept. of Agriculture, University of Minnesota, St. Paul, Minn.

**Aerial View on Score Card**—One of the most attractive scorecards we've seen lately is that of the Seawane club of Hewlett Harbor, N.Y., where the active, able J. A. Andrews holds forth as managing director. The entire back of the card (which has the customary fold in the middle) shows an air photograph of the course. Holes are plainly diagrammed in white.

**While WPA money it still available** it's time for golf clubs to see that work is scheduled on public highways serving the establishments.
NOW... The ROSEMAN SPECIAL All-Purpose TRACTOR Only $550.00

The Roseman Special is equally suitable for mowing, hauling, and all phases of golf course repair and construction work. Its sturdy 4 cylinder engine is the most economical to operate. Power is multiplied by the use of a 5 to 1 reduction gear. It will handle a 7-unit gang under all conditions. Drive wheels are equipped with big low-pressure, non-skid tires, that provide maximum pulling traction and prevent slippage on hillsides.

The large dump body is custom built. Bed is of seasoned white oak—heavily ironed for added life. The body is easily operated from the driver’s seat. Side boards are quickly removed to provide a flat bed when handling large pieces or to give a clear view of the mowers when cutting.

Get the low-down on this low-cost, low-upkeep and low-depreciation tractor. Mail the coupon today.

Roseman Tractor Mower Co.,
800 Davis St., Evanston, Ill.
Please send me full details of the Roseman Special Tractor.
Name
Position 
Club
Address

If you prefer, use QUICKMAIL coupon No. 21 to answer this ad.
The newly completed $90,000 clubhouse at the Griffith Park Golf Course, scene of the 1937 $8000 Los Angeles Open, has been described as one of the finest municipal golf structures anywhere in the country. It had its christening on the first day’s play of the Open.

Here’s An Argument: "Are Long Irons Vanishing?"

GEORGE ROOT, pro at Bunker Hills GC., Dubuque, Ia., puts into a letter to GOLFDOM, a matter that has been debated fairly often lately when pros get together. Have your own say. We’re taking no sides. Writes Root:

Do you remember seven or eight years ago when the midiron was the duffers’ favorite club? It was their most nearly reliable club in tough spots and even was used for driving by plenty of the dubs in distress.

Today the average golfer is shying away from the midiron and even some of the stars are using No. 4 or No. 5 woods instead of the irons.

Why? I’ve tried to get the answer and my conclusion, subject to revision when someone comes up with a better answer, is that the 1, 2, 3 and 4 irons have short, thick blades with comparatively small bull’s-eye areas on which the ball is to be hit properly. Generally speaking, the rest of the irons, with large faces, are easier for players to use.

To my observation over the last several years, the week-end golfer seldom hits a good iron shot. Shanking is becoming more of a disease than it ever was before when these fellows try to use long irons.

I am inclined to believe that present iron heads are too small for the ball now in use. When even the duffers were pretty fair midiron players the smaller “bullet” ball was in use and strange, but true, the iron clubs had larger blades.

With the coming of the present ball, clubmakers started building irons with compact blades for more power. Then flange-headed clubs, which also gave more power, came into great popularity. The weight used in the flange had to come from somewhere, so the size of the club face was reduced. These changes were accompanied by transfer of more weight to the hosel in many cases and with through shaft sleeve location in some cases further swinging weight was lost.

Give the average golfers more hitting space on the iron faces and I think you’ll see them hitting more satisfactory iron shots and scoring better.

If I’m right on this, so far as the average player is concerned, not the keenly skilled star, maybe we are on our way to getting new models enough different in appearance to make iron club sales perk up. If I’m wrong in my observation and reasoning, will some of the experts tell me where, and how I went astray?

A RECENT issue of the New Yorker had a cartoon of a salesman in a store golf department showing a golf bag to a prospective purchaser. The salesman was saying: “This bag here has a cleverly concealed false bottom. Why, I don’t know.”

Richard Decker, the cartoonist, put across an accurate comparison of the difference between typical store salesman and the informed pros, who know their merchandise.
A GAIN we come around to one of the handicaps to operating a golf club as a business; the matter of having pro contracts expire in the spring. It’s not only a rank injustice to turn a pro loose with little time for getting another job for the season but it’s hard for a club to locate the candidates for a job the club would like to get and give these candidates careful, thorough investigation.

Kids Have Own Menu Card—Children’s menus, especially printed, were instrumental in upping the family business at Albany (N.Y.) CC in 1936. Henry Dutton, Albany manager, is a strong believer in attractive menus at country clubs and points out that failure to have a distinctive appearing menu is a general shortcoming of otherwise high class service at golf clubs.
"Course First, Then Add Other Features" is Sound Policy

WHENEVER we hear some golf club weathered a severe financial storm or solved some difficulty facing it, we like to pass it on to other clubs who may be able to profit by the methods of those who have proved themselves good skippers. This is the letter from a California club:

“Our clubhouse, restaurant and beverage sales are leased to a concessionaire. We furnish most of the equipment and he purchases his own supplies and makes what profit he can through sales to members. Our house operations entail no profit to the club and likewise no loss other than the overhead of furnishing building, equipment and fuel for the concessionaire to operate.

“The many interesting, instructive articles in GOLFDOM, with reference to clubs which have successfully weathered the lean golf years, have been particularly interesting to us because ours was a real problem, too, when our membership dropped to 170. We organized in 1923 on the basis of furnishing real golf to the golfer of moderate circumstances and developed 18 holes with grass greens and fairways. Our membership built as high as 250 at one time, during which time our long term obligations reached $35,000.

Cut Debt More Than $16,000

“We met our depression problem by curtailing capital expenditures, reducing our maintenance budget from $19,000 to $13,000 annually, and by first selling non-proprietary memberships and later, when golf was at low ebb, by giving away regular memberships. Between 1929 and the present date we have reduced our long term obligations from $33,500 to $17,000, kept our current bills paid; built a $3,000 locker-room and $4,000 swimming pool almost entirely from membership subscriptions and we still have a club where the average golfer can enjoy real golf 12 months of the year.

“Our motto has been to provide a real golf course first and add other conveniences as time will permit. We now have just that—a course we are proud to show anyone from anywhere, any time, without apologizing for the fact we have to pump for irrigation seven months of the year in this dry climate. We are still looking forward to the addition of other conveniences and improvements which will parallel our course. We are sure our membership will continue to increase—determination and facilities will handle that—and then improvements will follow.”

Dues Collections Made Less Painful Through Proper Scheduling

Editor, GOLFDOM:

Do you have any information on the general practice regarding the collection of dues at country clubs? How successful is the monthly payment plan? Over how many months are dues usually collected?

• The general dues-collection practice at country clubs is to schedule payments on either a quarterly or monthly basis. The quarterly plan is most general in the East, the monthly plan elsewhere.

Neither of these is very smart from the psychological angle, since no golfer likes to pay dues during the inactive months of the year. It is something like the income tax—you can’t see where you’re getting anything for your money.

You have possibly noticed that many resignations occur in January and February. Nearly all of such withdrawals from the club can be laid to the January statement from the club, which arrives at the time of year when golf interest is lowest, holiday bills are pressing for payment, and the bankroll is thinnest.

Many progressive clubs have seen the light in this regard and have adopted a schedule of dues-payments that begins 30 or 60 days ahead of the active season and is completed by October 1st.

Payments may be spread evenly through the period, but many clubs prefer to collect greater amounts at the start of the season, when the club is buying supplies and incurring the greater part of its annual obligations. It provides the money to discount bills and a club discounting its bills is always in position to expect lowest prices on its purchases.

Admittedly, this plan makes each dues installment larger than would be true under a monthly plan, but it is easier to collect a sizeable amount while the golf bug is biting than a modest one during the dead months.
FEBRUARY, 1937

A SHORT SHORT-COURSE IN GREENKEEPING

HIGH rating placed by attending green-keepers on the papers presented at the annual Lawn Day of Massachusetts State college suggested that GOLFDOM present available outlines of these papers as prepared by the authorities who read them.

In the following notes of the authors, greenkeepers will find considerable material for study and discussion.

SOIL WATER AND THE GRASS PLANT
By HOWARD B. SPRAGUE

The supply of soil water is indispensible to growing grass. Living green plants are 70 to 95% water, and this content must be maintained. Water is used to manufacture new cells and tissues in roots, stems and leaves, and all of the soil nutrients enter the plant dissolved in water. In addition, it has been estimated that 20 to 40 gal. of water are given off by the leaves of grass on each 1,000 sq. ft. of lawn surface during a single hot day. The most important point to note is that every drop of this water must be absorbed by the plants’ roots from the soil.

The principal supply of water is rainfall. This is supplemented by artificial watering in dry periods. The effectiveness of rainfall is determined by the rapidity with which it falls, the ability of the soil to absorb it, and the evaporating power of the air. Gentle rains are more effective than sudden downpours, and gentle slopes permit greater penetration than steep slopes. The drying power of the air normally increases from April until it reaches a peak in July, and thereafter it falls steadily with the season. May, June, July and August are all months when evaporation normally is high in comparison to rainfall, in contrast with September and October which permit the restoration of soil moisture exhausted in summer.

Only a portion of the soil moisture is available for use by plants. The thin films of water held tightly by the soil particles are not used by grass roots. Thus, plants wilt when there is still moisture in the soil because it is held so strongly that the grass roots cannot absorb it. Only the water in the capillary spaces between the soil granules is useful to plants. After a heavy rain, or watering, some free water is present in soils, but this quickly drains away in good soils. The maximum water holding capacity of soils is the amount of total water which the soil contains after the superfluous water has drained off. To illustrate, a certain sandy soil may have a water capacity of 17 lbs. per 100 lbs. of soil. Since 4.5 lbs. will be unavailable to plants in this soil, the potential supply for use by plants is 12.5 lbs.

The water holding capacity of soils varies tremendously with texture, structure, and organic matter content. A rich silt loam may easily hold twice as much available water as a light sandy loam. In general, heavier soils are capable of storing more water than light soils. Also, soils which are in good structure or tilth will store much more water than soils of the same texture which are badly puddled or compacted and have but little pore-space. Soils that are rich in organic matter are more likely to be in good tilth, and the organic matter itself has at least 10 times the water holding power of soil particles.

The depth of the root system determines the use which grass roots are able to make of the soil. Poorly drained soils force plants to develop shallow root systems. On well drained soils, the height of cut and system of fertilization influence the root development. The ability of grass to endure drought is determined by the water supplying power of the soil and the depth to which plants can use soil moisture.

AVAILABILITY AND LIFE OF FERTILIZERS
By L. S. DICKINSON

The availability rating of a fertilizer is a comparison with a standard whose nitrogen, phosphorus, or potash, as the case may be, is wholly useful to the plant use within a reasonable time after the fertilizer is applied. For example: In nitrate of soda all of the guaranteed nitrogen is immediately available for plant use when dissolved in water (soil water); cottonseed meal has an availability rating of 70 which means that only 70% of the soil.
<table>
<thead>
<tr>
<th>Material</th>
<th>Availability of Nitrogen</th>
<th>Period of influence in number of days after application</th>
<th>Start</th>
<th>Peak</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia</td>
<td>90</td>
<td></td>
<td>3</td>
<td>6-9</td>
<td>16</td>
</tr>
<tr>
<td>Ammon-Phos</td>
<td>90</td>
<td></td>
<td>5</td>
<td>8-12</td>
<td>18</td>
</tr>
<tr>
<td>Bone Meal (steamed)</td>
<td>25</td>
<td></td>
<td>20</td>
<td>30-35</td>
<td>45</td>
</tr>
<tr>
<td>Castor bean pomace</td>
<td>70</td>
<td></td>
<td>9</td>
<td>25-28</td>
<td>42</td>
</tr>
<tr>
<td>Cottonseed meal</td>
<td>70</td>
<td></td>
<td>7</td>
<td>18-22</td>
<td>35</td>
</tr>
<tr>
<td>Calcium Cyanamid</td>
<td>90</td>
<td></td>
<td>10</td>
<td>14-18</td>
<td>25</td>
</tr>
<tr>
<td>Dried blood</td>
<td>80</td>
<td></td>
<td>5</td>
<td>8-10</td>
<td>22</td>
</tr>
<tr>
<td>Fish (ground)</td>
<td>70</td>
<td></td>
<td>7</td>
<td>12-16</td>
<td>30</td>
</tr>
<tr>
<td>Guano</td>
<td>70</td>
<td></td>
<td>8</td>
<td>14-18</td>
<td>30</td>
</tr>
<tr>
<td>Garbage tankage</td>
<td>30</td>
<td></td>
<td>22</td>
<td>30-35</td>
<td>42</td>
</tr>
<tr>
<td>Hoofard Horn meal</td>
<td>60</td>
<td></td>
<td>18</td>
<td>30-35</td>
<td>50</td>
</tr>
<tr>
<td>Manures, dried</td>
<td>60</td>
<td></td>
<td>12</td>
<td>17-22</td>
<td>35</td>
</tr>
<tr>
<td>Milorganite</td>
<td>80</td>
<td></td>
<td>5</td>
<td>12-15</td>
<td>40</td>
</tr>
<tr>
<td>Nitrates</td>
<td>100</td>
<td></td>
<td>1</td>
<td>4-8</td>
<td>15</td>
</tr>
<tr>
<td>Poultry Manure</td>
<td>70</td>
<td></td>
<td>5</td>
<td>10-14</td>
<td>25</td>
</tr>
<tr>
<td>Soybean meal</td>
<td>70</td>
<td></td>
<td>20</td>
<td>28-32</td>
<td>40</td>
</tr>
<tr>
<td>Tankage, High grade</td>
<td>70</td>
<td></td>
<td>10</td>
<td>14-18</td>
<td>40</td>
</tr>
<tr>
<td>Tankage, Low grade</td>
<td>30</td>
<td></td>
<td>20</td>
<td>30-35</td>
<td>45</td>
</tr>
<tr>
<td>Urea</td>
<td>90</td>
<td></td>
<td>8</td>
<td>12-15</td>
<td>25</td>
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</tbody>
</table>

Guaranteed available nitrogen can be made ready for plant use within a reasonable time. The remainder of 30% is not lost, but made available in small quantities over a considerable period of time.

Obviously there are many factors that control the availability and duration of the effectiveness of fertilizers when applied to the soil, more especially so in the case of top-dressing as is usually practiced in turf culture. The above table is arranged with the assumption that each fertilizer is used under similar soil conditions.

WEED PROBLEM OF TURF

By HOWARD B. SPRAGUE

Weeds are plants growing where they are not planted. They are frequently more aggressive than turf plants. According to length of life, weeds are:

**Annuals**, which complete growth in one year and produce seed abundantly. Examples: Crab grass, goose grass, foxtail grass, knotweed, chickweed, panic grass.

**Biennials**, which require two seasons to complete growth; the first being used to manufacture and store food for the production of flowers with the formation of seeds in the second. Examples: Common thistle, wild carrot.

**Perennials**, which live more than two seasons; usually begin forming seed by the second season. The most troublesome perennials have creeping, rooting stems which contain stored food and send up new shoots. Examples: Dandelions, plantain, poison ivy, field sorrel.

**Sources of Weed Seed:**

a. Carried by wind, drainage water, and animals, including man.
b. Introduced in fresh or partly-rotted manure.
c. Added in top-soil used for topdressings, or carelessly managed compost piles.
d. Present in seeding mixtures, particularly cheap seed.
e. Produced by weeds in turf, in spite of close mowing.

**Control of Weeds:**

a. Remove sources of weed seeds; bake or steam topdressing to kill weed seeds, or purchase topdressing that carries no weed seed.
b. Maintain turf in vigorous condition to prevent weeds from obtaining a foothold. Proper liming, fertilization, mowing, watering and rolling are very effective.
c. Close mowing kills many types of weeds; prevention of seed formation in the fairways and the rough by mowing also aids.
d. Use of chemicals, as sprays, or in topdressing (such as lead arsenate).

**Some Troublesome Turf Weeds:**

Crab Grass—Warm season annual, spreads by seed. Hand weed greens in June and July. Use lead arsenate in topdressings and keep turf vigorous, particularly in early spring and summer. Time-