Hole 9. 293 yards, par 4. 50 yds. of rough in front of tee; then fairway to well-trapped elevated green.

Total yardage 3,017, par 35.

The large amount of rough in front of almost every tee practically kills any topped shot. Where on many courses a topped ball will roll from 100 to 200 yds., on the Saltville course most topped balls come to rest 25 yds. from the tee in very deep and thick rough. The flat damp course gives little roll and the rough is really rough—thick bluegrass. These natural hazards make the course far from easy, as attested by a 78 (for 18 holes) turned in by the only professional who has played the course, and a record of 80 for club members.

One-Man Crew is Sufficient.

One man maintains the course except when weeding or topdressing is being done. This is possible only because of power operated machinery—rough, fairway and greens mowers being operated by gasoline engines. When we first put the 9-hole course into play it took a man a full day to cut the greens by hand—with a power mower he does this in 3 hours.

His time is occupied about as follows:

<table>
<thead>
<tr>
<th>Hrs. per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairways—Cut twice a week........ 14</td>
</tr>
<tr>
<td>Greens—Cut 3 times............... 9</td>
</tr>
<tr>
<td>Rough—Cut once a week............ 9½</td>
</tr>
<tr>
<td>Tees, Approaches ............... 5</td>
</tr>
<tr>
<td>Topdressing, weeding, nursery, repairs .................. 15</td>
</tr>
</tbody>
</table>

52½

During the winter the groundkeeper repairs all machinery, and also finds time to plant and work a nursery in which we now have more than 1,000 seedling evergreens and shrubs which will be used in beautifying the course. Likewise, topdressing is prepared during the winter for the following year, drainage repaired and enlarged.

We have but 20 members. No dues are charged but each player contributes $5.00 per month for maintenance.

We do not have a championship course, but we do have one of which we are proud and one which we take pride in showing to any visitor. The course is open to everyone, but as we are off the main highway of travel our green-fee collections will not amount to $100 a year. But a 3,000 yard golf course for the use of but 20 members! Try and beat that!

Massachusetts Short Course Runs
January 4 to March 14

MASSACHUSETTS State College’s sixth winter school for greenkeepers is scheduled to open January 4, and close March 14, 1932. Registrations have been received from the mid-west, south to Virginia, New York, and the New England states.

Courses to be given are the same as last year, namely: Grasses, Soils, Cost Keeping and Analysis, Equipment, Botany, Drainage, Water Systems, Managerial Problems, and Landscape Appreciation. The duration of the course is ten weeks. Better equipment and laboratory space is to be provided and an exceptionally well balanced program of outside speakers is being arranged.

The winter course for greenkeepers at the Massachusetts State College now has over ninety graduates. A number of these graduates have applied for a course giving advanced work and an opportunity for directed problem study. As the State College was first to offer a school for greenkeepers, so it is going to be the first to offer an advanced school for greenkeepers.

The advanced school will be conducted at the same time as the regular school, and will be open only to those who have graduated from the regular school. Enough applications have already been received to make the course a very promising one. The two schools will bring together for the 10 weeks, 35 men whose ages will vary from 22 years to 50 years, and experience in golf course maintenance from two years to 20 years.

These schools are conducted by the Short Course department, R. H. Verbeck, director, and are under the immediate supervision of Professor Lawrence S. Dickinson.

Public Play Over Private Links for Richmond Charity Fund

THREE OUTSTANDING private clubs of the Richmond (Va.) district, Hermitage, Lakeside and C. C. of Virginia, pulled off a novel stunt during November as their contribution to the local community chest fund. The links of these exclusive organizations were thrown open on announced days for play by the general public. A uniform green fee of $1.00 was charged.

According to news accounts, the public responded heartily.
How Wide Should a Green Be?
This Diagram Tells You

By JACK FULTON, Jr.

How wide should a green be? Can it be determined mathematically? Few followers of the game of golf have ever given this a thought, yet it is obvious that a green 100 ft. across is too wide for a hole measuring 140 yds. from tee to cup, and a green 30 ft. across is too narrow. The ideal width, wide enough to be fair and narrow enough to require accuracy, lies somewhere between. Can this be determined in advance of construction to guide the architect?

Bill Langford, of the firm of Langford and Moreau, golf course architects, has been studying and experimenting with green widths for a long time and has recently worked the final kinks out of a graph which he says will give you the right answer in a jiffy. The graph is reproduced with this article.

Hole length is shown horizontally in yards, each vertical line from the left margin representing 10 yds., with a heavier line for each 100 yds. Green width is charted vertically, 10 feet to a line.

Reading Graph Is Simple.

To determine how wide a green should be for a hole of known length—say 430 yds.—follow along the base of the chart to the 430 yd. line and count how many feet it is up that line to the point where the diagonal line crosses it—in this case 85 feet, the proper width for a 430-yd. hole green. That's all there is to reading the graph.

In determining the contour of the zigzag line which runs through the chart, Langford called into service some rather advanced mathematical practices. Comments on his general method will aid in understanding why the diagram is so laid out.

In the beginning, certain basic assumptions were established. First of all, he believes 240 yds. is a fair average of a first class golfer's drive when he hits it, and that a hundred foot green is wide enough to receive shots of that length.

With this start Bill charts green width for one shot holes. Since obviously the width of a green should depend directly on the length of the shot played to it the graph starts at 0 and runs to 100 feet at 240 yds.

How Two-Shot Holes Were Charted.

The probability of a player getting home in one stroke on holes over the 240-yd. mark grows less as the distance increases until that length hole is reached which is just beyond the longest tee-shot. Said another way, this length is the shortest which a first class golfer will certainly need two shots to reach. He fixes this distance at 300 yds., allowing 60 yds. for extra long tee-shots.

Since the golfer will almost always need two shots to reach a green within this 60-yd. zone (between 240 yds. and 300 yds.) it would be absurd to keep the green 100 yds. wide for the easy pitch shot which will generally be left. The green must be narrower. Just how much narrower Bill has determined by mathematical progressions.

Use this diagram, as explained above, to determine proper green width. For readers mathematically inclined, the tables on the next page will tell how graph was developed.
While 240 yds. is a fair average for a well-hit tee-shot, it is too long for a well-hit brassie shot, because the club's face is laid farther back and also because varying lies and stances are met. For an infinite number of brassie shots—played under varying conditions of lie and stance—a fair average is 210 yards. Langford estimates. This is 35 yds. under the well-hit drive average.

But it would not be correct to figure on the entire 35 yd. allowance on a two-shot hole. Not only is there a good possibility that the golfer will exceed 240 yds. off the tee, but there is a chance that the lie and stance for the brassie shot will be good. So a proportionate part of the allowance is given on two-shot holes, more on three-shot holes and the entire allowance on holes requiring four or more full shots from tee to green.

The total allowance progresses in regular stages—15 yds. on two-shot holes, 25 yds. on three-shot holes, 30 yds. on four-shot and longer holes. Thus the extreme length of a two-shot hole, according to Langford, should be 240 yds. plus 225 yds., or 465 yds.; of three-shot holes, 240 plus 225 plus 215, or 680 yds.; of four-shot holes, 240 plus 225 plus 215 plus 210, or 890 yds.

The graph shows the width greens for one-shot, two-shot, three-shot holes, etc., progressively. In each case it rises to show wider greens as the length of the shot to them increases, falling again in the intermediate zone between each definite class of hole as the probability of their being reached by a long shot decreases.

Must Allow for Rugged Terrain.

The graph is designed for level terrain and average ground speed but it can be used for rolling or hilly land by computing the actual playing length of the hole and using the proper width green for that length of hole. For example, an up-slope at the point where balls are liable to land will increase the playing length of a hole. Similarly a down-slope will tend to decrease the playing length.

Langford feels that the present day arbitrary limits for par are incorrect, and that par-figures should be as follows:
Par 3 hole......... 240 yds.
Par 4 hole.......... 465 yds.
Par 5 hole......... 680 yds.

The par-3 distance is not greatly at variance with present standards, but the par-4 and par-5 distances exceed the U. S. G. A. recommendations by 20 and 80 yds., respectively, enough boost to make a lot of present day easy par-5's—those lying between 446 yds. and 465—mighty tough par-4's.

Readers interested in the mathematics behind the graph may obtain full details by writing W. B. Langford at 2405 Grace St., Chicago.

Argentine Golf Interest Brings New Magazine

As the first golf player magazine to be published in Latin America, El Golfer Argentino recently made its appearance. It had an initial circulation of 8,000. Single copies sold for $1. Thirty advertisements appeared in the first number.

The magazine is published by Editorial Atlantida, Buenos Aires.

Municipal welfare department of Dayton, Ohio, is constructing a golf course in the Miami View district to be devoted to the exclusive use of colored citizens. Laborers, from the unemployed workers of the city, are paid in grocery orders.
A new 9-hole golf course is being built in this old river bed at Pasadena. The piles are topsoil to cover the sandy bottom.

Coast Winter Tournaments Make Greensmen Work Overtime

By ARTHUR LANGTON

MID-WINTER is that time of the year when all good California greenkeepers, and some of the other kind too, are besieged with extra work that is incidental to tournament play of all kinds. Not that they should complain on this score, for December and January are among the best months of the year for holding competitions. The time for brown-patch and sun scald supposedly being over, all the greenkeepers have to worry about outside of their regular work are floods, drought, impaired drainage, heavy play, no play at all, Bermuda grass, worn-out tees, construction work, annual meetings, and preparations for next summer. Therefore, a three-day tournament with several thousand spectators trampling over their handiwork fits in very well with their scheme of things.

Tournaments a Tradition.

But enthusiasm for big money tournaments in California is noticeable because of its absence at the present writing, with the result that only five are being held this season, and even one of the five is being held across the border in Agua Caliente. Valuable though they may be, there seems to be no getting around the fact that the annual visits of high powered golfers are not popular among those who have to pay for them; this because the incidental benefit has not become apparent as time goes on and doubt begins to grow that any good ever will be evident. However, they have become a part of the
Golden State and are as much an institution there as poinsettias, cafeterias, the Largest Ocean in the World, Hollywood, Spanish houses, and unusual weather. None of these things are indispensable, but to rid California of them would be like doing away with the unsanitary yet highly romantic canals of Venice, Italy.

So in spite of the depression playing puss-around-the-corner, the destructive trampling of thousands of gallery feet, and the accompanying inconvenience and expense, the San Francisco, Pasadena, Santa Monica, Los Angeles, and Agua Caliente tournaments will be held this winter in the order named and will offer the peripatetic professionals over $37,000 in prize money, not to speak of side bets and publicity. But gone is the Palos Verdes open, the San Gabriel Pro-Amateur, the Long Beach open, and one or two others, gone where the easy pickings of 1928 have vanished; what's more, they have gone further than just around the corner.

Eleventh Hour Placing.

As far as the California greenkeeping fraternity itself is concerned, it is not at all worried about the current tournament situation except as an indication that times are bad. However, there are one or two course superintendents who are very much concerned, and they are employees of clubs which may be the site of the Los Angeles Open tournament. This annual event is to be played January 9, 10, and 11, and at the time of writing (Nov. 16) nobody knew where it was going to take place; all of which makes it tremendously hard on the greenkeeper who finally has the job of getting his course ready for the big affair. It will mean that his preparations will be rushed, for instead of having months to make ready he only will have a few weeks or a few days if the decision is not made soon. The reason for the delay seems to be that no suitable club desires to have the inconvenience of putting the affair over. As one man expressed the situation, "The one that weakens first will get the tournament."

As matters now stand there are four courses which are qualified and most liable to have the tourney—Wilshire where it was held last year, Hillcrest, Riviera, and Los Angeles. Each of these four layouts has a championship course kept in first class condition; each is within easy reach of the metropolitan district of Los Angeles; each has facilities for handling a large crowd; and lastly and most important, each course is securely fenced so as to guarantee that all spectators shall have contributed an entrance fee to the cause.

Greensmen's Viewpoint.

The manifest purpose of expenditure of money on mid-winter tournaments is to create good will towards the courses in particular and California in general so that easterners will be tempted to visit the state and spend some money, to put the matter crudely. It is not the purpose of this article to doubt that the method employed is efficacious, but the psychology involved seems to be a bit vague. However, there may be many people residing in the Pacific Southwest at the present time who have come here because of highly publicised golf tournaments, but the writer is not acquainted with them. Those who seem to be most benefitted are the prize winners who return to their home courses in other parts of the nation to spend their money. So far this has been written at the risk of being termed destructive criticism. Here is a suggestion offered gratuitously to California chambers of commerce: Eliminate the cash prizes and spend the money on the courses with the purpose in view of providing the snowbound Eastern business man an opportunity to enjoy cheaper and better golf in this state of eternal sunshine. This would attract the sort of people to whom local real estate agents are really anxious to talk. The eastern professionals should not object to this situation because there never has been enough prizes to go all the way around, with the result that coming to California has meant just an expensive outing for most of them.

Keep Greensmen Keyed Up.

But getting back to greenkeeping, although there is a paucity of big-money tournaments this winter, there are enough inter- and intra-club matches going on to keep the greensmen busy during the winter season, and in many ways these are just as exacting as the bigger events; although there are no galleries to be cared for, the players are more familiar with the surroundings and are quick to note any deficiencies on the part of the greenkeeping system. The greenkeeper must display his true worth this year as never before because he must keep the ball rolling satisfactorily no matter how cramped financially his club may be. And it is necessary for him to do this because a tournament played upon a poorly prepared
Practice green at Palos Verdes C. C. The darker area on the right is new grass replacing turf removed for course repairs

course is worse than no job at all. To be fired is bad enough, but to be fired because tourney players complain far and wide about the course conditions means that the greenkeeper's reputation is blasted completely.

Little money is available for extra work this year, so that the greenkeeper who has maintained a consistently good course is the one who will have a distinct advantage when it comes to preparing for heavy play. It has been found practically useless to wait until a few days before a tournament before starting to make preparations, for such a procedure is fraught with peril. The days of miracles are over and natural growth even assisted by modern science sometimes is maddeningly slow. Therefore instead of taking the risk of burning grass with fertilizers it has been demonstrated that it is better to polish up existing course conditions rather than try to create new ones. Inasmuch as most clubs felt that they could not afford to start making preparations for heavy winter play two or three months ago, visiting golfers will have to take the California golf courses "as is" and without frills, but it is to the credit of the local greenkeepers to say that the visitors will not be disappointed.

Many interesting activities are being put into practice on Coast golf courses for the purpose of alleviating the depressing influence of current economic conditions. Especially is this true on many of the municipal layouts where unemployed relief is being carried out in an efficient manner. A typical example is that of the Pasadena Municipal course which will be the site of the Pasadena Open tournament, December 18, 19, and 20. Instead of attempting to improve the existing layout, which has been kept in excellent condition, an entire new nine holes is being constructed with another contemplated, and all of the work is being done by unemployed residents of the city. Incidentally the Pasadena course is located in an old river bed or arroyo. At one time the flood waters raged through here after heavy storms, making the ground useless for any permanent structure. But the construction of a dam and other flood controls made much of this land available for various civic enterprises with the result that the one-time river bed now contains besides the golf course, a park, the famous Rose Bowl where New Year's day football games are held, and ample parking space for the automobile of visitors to all three points of interest.

While every municipality does not have an arroyo at its disposal, almost every club has a practice putting green and can put it to the same use as did Gomer Simms, greens-wizard from the Palos Verdes club of Redondo Beach. Simms has constructed an unusually large practice green with an excellent growth of Cocos bent turf. Any bare spots which appear on his greens occasioned by extra heavy play or other causes are quickly and cheaply replaced by sod from the practice green which is reseeded immediately, thus inconveniencing no one.
Experts' Talks to Draw Many to Greenkeepers' Convention

BELIEVE IT or not, the prospects for the sixth annual convention and exhibition of the National Association of Greenkeepers to be held at Hotel Pennsylvania, New York city, Jan. 19-22, indicate the largest attendance the association ever has seen. The New York meeting will be the first the organization has held on the eastern seaboard and many of the superintendents and chairmen who never have wandered into the territory of the Osages, Navajos, Ponca and other tribes on the sunset side of the Hudson are anxious to find out just what these greenkeeper conclave are all about.

With the large number of golf clubs in the east and the ready availability of New York as a meeting place, the dope is that registration of greenkeepers should reach a new high. The meeting will not be without a goodly number of men from the midwest for the sad recollections of the past season have the appetites all whetted for any inside information that can be secured on course maintenance at one of these sessions.

Fred Burkhardt, chairman of the golf show committee, has arranged exhibition space and meeting headquarters all under one roof and the facilities will be vastly improved compared with the layout the boys had to contend with when they met to hear addresses last year. Burkhardt expects to have all display space sold prior to the opening of the show. Repairs of equipment that carried golf course machinery past its allotted time seem to have reached the limit last year and Fred is counting on the prospects of a flood of new business orders to bring manufacturers' displays to the show.

The usual arrangement of fare and a half for round trip railroad tickets has been effected, so when any of the laddies shove off for New York they should ask for a convention certificate.

Just what the policy of the clubs will be this year on sending their course superintendents to the convention on the greens budget is hard to determine at this time. For the last three years there has been a constantly increasing number of clubs paying expenses of their men as part of the greens budgets and having plenty of evidence that the convention cost was a valid and productive detail. After this last season when the scourges raised the costs of course maintenance in many spots and the clubs suffered cuts in incomes, the decision to send a man to the greenkeepers' conclave must call for considerable faith in the strictly business idea and practices of the convention. On that basis attendance is warranted as there is far less frolic and fluid at a greenkeepers' convention than usually is witnessed at national sessions of business men. The answer is that the greenkeeper these days is trying to make $20,000 do more than $28,000 had to do on a course a couple of years ago and he either has to pick up a lot of smart and thrifty ideas from his comrades in the cause or tremble on the brink of a change in location.

Assignments of program subjects have not been made but when you look over the following array of talent that Col. John Morley and his aides de camp have selected to pitch helpful thoughts at the greenkeeping gallery, you will see that the keynote is going to be "down to bed-rock" in these convention addresses. The tentative line-up of speakers, which appears for the first time in print right now, is:

M. E. Farnham, sec., Philadelphia Association of Golf Course Supts.; E. Tregillus, formerly head of Canadian Green section and now supt. for A. D. Lasker’s Mill Road estate and in active management of the Mid-West Turf garden of the U. S. G. A. Green section; Prof. Cubben, of the pioneer greenkeeping school at Massachusetts State Agricultural college; Martin L. Davey, internationally noted tree expert; Carl E. Treat, Woodland G. C., supt., who is one of the outstanding practical authorities on New England maintenance; Kenneth Welton, brilliant young scientist of the Green section; Prof. A. H. Tomlinson, Ontario Agricultural college authority on landscaping; Jack Pirie, one of the most successful pro-greenkeepers and a practical authority on construction; L. J. Feser

(Continued on page 64)
Russellville's clubhouse is a colorful combination of gray native stone, white woodwork and red composition shingles

Russellville Members Proud of Their $16,000 Clubhouse

By R. E. LIVINGSTON

Just five miles from the little town of Russellville, Arkansas, stands one of the most beautiful golf courses in the entire South, the Russellville Country Club. Many a tourist, speeding along the highway, has slowed down when he spied the attractive layout, and has driven in to play a round of golf, which he was welcome to do without green-fees, providing he could show a membership card in any other club.

When the club was founded, the grounds were an abandoned hill-side farm, covered with all native pine, scrub oak, persimmon sprouts and scraggy fruit-trees. The soil is yellow clay and a gully running through made it wash badly for farming. So it was bought at a very low figure, and a young banker visualized how beautiful a clubhouse would be, set on the side of the hill. More than this, his practical eye saw that there was more than enough native stone rolling around in the way to build the house.

When this was pointed out to the residents of Russellville they could see it too; so the club organized and construction began with enthusiasm. The gully was bridged in a few places for a water hazard, and the washes furnished the rough. It was a small task to roll and cut down a few spots and plant a little more grass. A one-way road wound around the clubhouse site, and at one side it required but little excavating and leveling to form a splendid tennis court. In a little grove near by Dutch ovens were built of stone, and rough tables and benches erected for picnic meals; higher on the hill, there are more of these, for those who wish to reduce by climbing.

At present, the course is nine holes in length, but there is enough land to extend it to eighteen holes whenever desired. The
location is close enough to town that a member may leave his business and drive out in ten minutes over a splendid highway. City light and power-lines run close by, so the cost of water and lights is negligible, and this is quite an item to consider in building a clubhouse. Individual plants are a nuisance to keep in repair, when subjected to uncontrolled public use.

The inside of the house is finished in pine stained to a dull oak finish, with light oak floors in all except the kitchen. The total cost of the building was less than $16,000 five years ago, so it would approximate that amount now in a city, or might even be a bit cheaper. It stands two stories...
high. A deep basement houses the men's showers and lockers at one end and the furnace room at the other.

The beamed ceiling extends the height of the building in the lounge, which also serves as the ballroom. A stairway runs up at either end to balcony leading to restrooms and ladies' shower-baths. There is also a card room on each balcony.

Adjoining the lounge, which is broken on one side by a huge fireplace, is a sun-room, opening onto the stone and concrete veranda. Wicker furniture makes this a most attractive room. The chintz hangings at the casement windows were made by the ladies of the club at a sewing-bee; quite a neat sum was thus saved on the draperies. They worked like Trojans for two days, taking their own pot-luck lunch and making a picnic of the affair, a different group serving each day. They got so enthusiastic that they made summer covers for most of the furniture, too.

At the other end, adjoining the lounge, are two dining rooms equipped with plain oak tables made to order by local firms. The chairs are of the folding opera variety, so as to serve also for card-parties. The kitchen is equipped with an electric range and modern sinks and conveniences. A kitchen "shower" brought in many gifts for the pantry, as did a later flower and shrub "shower" to beautify the grounds. It was found most practical to use heavy linoleum on the kitchen floor, having it first cemented onto a felt base; this did away with the need for early replacing, and more than repaid the extra initial expense.

The two dining rooms and the sun-room offer possibilities for three or four parties in one day; if the guest-list is kept within the membership, there is no charge except special service from the keeper. If any guests are outside the membership, the fee is ten dollars. On the women's balcony is also room for another party.

No food supplies, aside from coffee and sugar, are kept in the pantry, so there is no inducement for tramps to break in. A bottle-drink stand—a mere shelter—is operated by a local boy during the summer season. Russellville believes with a small club of this type, situated within a few miles of town, it is a matter of economy not to maintain a chef in the house when the keeper and his family can prepare special dinners upon demand at reasonable fees. Most members, it has been found, prefer to bring their own food and prepare it themselves; wall sockets are convenient in both dining rooms and the kitchen, so that electric percolator may remain plugged to receptacles during the progress of a luncheon.

No regular cook is employed, but help in catering may be had from the keeper's family by paying a small fee. Each member is entitled to bring as guests only those who are ineligible to regular membership—thus keeping out local residents who might become members. Many clubs permit bringing guests promiscuously, enabling persons to enjoy the club privileges quite often on friends' membership; this often proves conducive to staying out of a club.

Out-of-town guests are always welcomed, and the ladies' day card games are always well attended. No charge is made for the games, and the women of the club take turns in being hostess and furnishing small prizes; usually four serve together. A family picnic is held twice a year for a get-together and general fellowship affair and these serve to keep up the interest in the club. Cost of the "eats" is borne by the club treasury. No larder is provided for those who entertain, each one taking out his own supplies, but having the use of kitchen and dining room free of charge.

No member is allowed to sell or transfer his membership, and the number is limited to 150 members—quite adequate for a town of 6,000. The fee is $150 per membership, having been raised from $125, which was found inadequate. This has been ample to pay out the loan on the building, and take care of overhead expense. The total property, 80 acres and the keeper's five-room cottage, the barns and the clubhouse are valued at $30,000—the cost of all buildings being nearly $19,000.

Sand greens are used in preference to grass greens, for in the South good turf greens are too expensive for a club of this size to maintain. The oiled sand dries quickly after rains. Twice the course has been made in 35, but it is seldom parred. The whole course is one of the show-places of Pope county, and is a lasting demonstration of what can be done with a very poor hillside farm-site.

The usual tournaments are held with clubs of nearby towns, and in winter a number of invitation dances are given, but the place is never rented for any occasion.