

yds. of steer manure and 15 yds. of sand were rotovated into the greens. Eighty lbs. of ammonia nitrate and 80 lbs. of milorganite were added and raked in. Then seaside bent was put on at 5-lbs. per 1,000 sq. ft. and 1/2 in. layer of steer manure was placed on top. This was kept damp at all times, and grass began to show in 12 days. The tees had 5 yds. of sand and 5 yds. of steer manure rotovated into them and were then seeded with fairway mixture at about 20 lbs. per 1,000 sq. ft. This included banks and approaches. Greens and tees were fertilized regularly with ammonia sulphate and milorganite following the first mowing on June 4th.

Blue grass, rye, rainier, and chewings fescues were mixed for the fairways and used at about 300 lbs. per acre. It began showing in 10 days. Complete germination was quite slow as the nights were very cool. Humidity was low — three to 20 per cent and the wind blew almost continually out of the southwest at 10 to 45 mph. This weather continued until July 1st. In late June fairways were fertilized with ammonia nitrate at the rate of 135 lbs. per acre. Growth and color rapidly improved after this application due to the fact that all western soils seem low in nitrogen. The first fairway mowing was on July 16th.

Clubhouse, swimming pool, tennis courts and playgrounds are still in the planning stages, but the pro-shop and three shelter houses, made of native logs, are very much in tune with surrounding country architecture. A lagoon that holds 400,000 gallons of water, the 300 evergreen and hardwood trees that were set out, the native scrub oak, redwood benches, and metal tee markers in the shape of antelope all add their bit. The first nine opened Aug. 12.

### Second Nine Built

Construction of the second 9 began Oct. 1st. All water lines, tees, and greens were surveyed and staked out, scrub oak and brush were cleared away. The first earth removed was at the place where the lagoon was to be. This lagoon holds 750,000 gallons of water. After the lagoon was dug, clay was hauled in and water was applied as it was packed by a sheep-foot roller. Bentonite was used on the banks.

Dirt taken from the lagoon was used as a base for the tees and greens. The building of these were similar to those of the first 9 with the exception that the tees were made larger, running between 4,000 and 5,000 sq. ft. and slightly elevated at the front.

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## Watch for This!

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Thank you.

GOLFDOM

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Water was piped from the first 9 through a 6-in. main into the lagoon. Fairways were laid out in a triangular water system with pressure furnished by a 40 hp., 550 gpm pump at 80 lbs. pressure. All greens and tees were surrounded by valves. Six, - 4 - and 3- inch ringite transite pipe was used as it was on the first 9. One and 1/2 in. galvanized pipe was used for laterals and risers with No. 16 Buckner valves. Valves are located so any portion of the course may be isolated in case of a break. All risers on hillsides and other necessary places were swing-jointed to help facilitate raising and lowering of valves after the ground settled.

Planting was started Nov. 1 and was completed about the middle of the month. This delay was due to a late shipment of cast iron fitting for the water system. Seeded areas were up and in good shape before the first cold weather. When conditions permitted, grass was watered.

In the near future water from the sewage disposal plant may be piped into the lagoons and will be used for irrigation. About 2,000,000-gals. of this water is now being wasted each day. Of this, Antelope will receive approximately half and the rest will be used to irrigate city gardens.

# Grau's Answers to Turfgrass Question

If you've got a question you want Dr. Fred V. Grau to answer, please address it to Grau Q&A, Golfdom, 407 S. Dearborn, Chicago 5, Ill.



**B**efore you set out to go someplace you had better know where you are starting from. This homely thought paraphrased from an admonition given to Glenn Burton of Tifton, Ga., by his father, might have been expressed with a little more regard to grammar but all of us know what it means. I had occasion to recall this bit of homespun philosophy recently as I was listening to testimony in Federal Court in a civil case involving property damage. The construction company involved made it a practice to send a skilled man in to survey the property before any construction was started. Detailed field notes were made which accurately located each tree, stream, fences, noted crops and their condition and probable yield, and the presence or absence of rocks. From these carefully preserved field notes, a report was prepared which became the standard reference regarding the particular property. Thus, regardless of the extent of future operations, they knew where they had started.

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### **Know Where You Are Starting From**

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The quality of the initial survey and its obvious impression on the court and the opposing counsel, set me to wondering to what extent this approach has been used when a golf course supt. signs his contract and starts his new job. In talking it over with some of the supts. at various conferences, I decided it might be a good idea to bring the thought before readers of GOLFDOM. At the same time there came a letter in the mail from a young man who

is about to step up to a large course and heavier responsibilities. In my reply I urged him to make a complete and detailed survey and inventory of every facility for which he would be responsible. Even at the risk of being too basic, let's outline how this might be done, realizing that methods will change with various situations.

### **List All Equipment**

Equipment would be first on my list. I would list each piece, note its condition and the need for repairs and replacement with a column for approximate cost. It would be a good idea, too, to carry a camera to record things that are unusual so that the committee will be able to view some of the things that are discovered.

Equipment needs good housing and repair facilities. Buildings and their arrangement should be noted with comments on changes for greater efficiency. What is the workshop like and how is it equipped for keeping machinery in operating condition? What are the facilities for the men so that they feel that their needs are recognized?

On the course, my first concern would be with the irrigation system. If a map is not available have one made at the first opportunity. Every outlet should be checked, along with water supply, pumps, hose and sprinklers. Anything unusual that might interfere with the smooth continuous operation of the system should be noted on the field record with recommendations for improvement and possible costs.

Now we are ready to inspect closely each turfgrass area, making detailed notes on kinds of grasses and in what amounts,

the weeds that are there, the need for repair, renovation, resodding, sprigging, seeding and fertilizer requirements. Soil samples should be taken and sent to the laboratory. This is very important as a reference point in the future. Closely connected with this grass survey is the availability of nursery stock for repair and replacement. Opposite each item in the field notes should be entered the probable cost of the needed item. Included also would be the condition of the bunkers and other features of the course, the need for sand, repairs to the roads, tree care and replacement. Good pictures along the way can be a valuable asset in any discussion about "What was it like when I came here?"

#### Establishes Reference Point

This little discussion isn't intended to tell anyone how a survey should be conducted because each situation will be different. It has been presented to stimulate thinking in the direction of having a solid reference point in any future deliberations. When a budget is prepared the value of such an inventory will be demonstrated very clearly. There will arise the very important consideration of salary and, of course, raises. Good records are extremely important in the business side of the supt's profession. He will advance faster with good records than without them. The report which will be prepared from the field notes will become a permanent record in the files of the club and the supt.

So, when you are discussing the new position with the committee, make it clear that you consider it your first duty to make a complete and detailed survey and inventory of every facility for which you will be responsible. You should be able to sell the idea for certainly it is necessary for the intelligent preparation of a realistic budget. The survey will have many other practical uses, too.

Q. Several years ago we started a putting green nursery of Penncross creeping bent from seed, according to your specifications. We are very much pleased with the nursery and our supt. feels it is the best grass for putting greens that he has ever come in contact with. But we have a question. Why is it when we take plugs of Penncross out of the nursery and set them into putting greens they are so slow in spreading? Is it something that we have done or haven't done? (N. Y.)

A. We are glad that the Penncross creeping bent seed has developed such fine turf and that you are pleased with it. We aren't

sure that the best way to use this grass is to plug it into existing greens except where there has been an injury and you need to make immediate repair. The grasses that you have in your greens at the present time are going to be highly resistant to invasion by another type of grass, and it may take several years before the newly set plugs of Penncross will begin to do any perceptible spreading. A far better way to use this grass would be to completely resod the greens with the sod from the nursery and then establish new sod in the nursery for another re-sodding job when it becomes necessary.

Another way to increase present Penncross sod area is to take the plugs from aerating, or the clippings from vertical mowing, and scatter them on newly prepared seed beds and let new turf develop from these. In that way you will be promoting those strains in the Penncross that have already proved themselves successful under your conditions.

Q. In some of your publications you recommend that common Kentucky bluegrass be mowed 1-1/2 ins. or higher. Then you say that Merion bluegrass will do better if cut 3/4 to 1 in. At other places you recommend a mixture of common bluegrass and Merion bluegrass. We are puzzled as to how we should mow a mixture of this kind, whether at the height to favor the common bluegrass or the height to favor the Merion. (Penn.)

A. The answer here is: "Effect a reasonable compromise". The lower cut is designed for Merion bluegrass grown in pure stand adequately fertilized and managed according to the needs of Merion. The higher cut is designed to help common Kentucky bluegrass overcome some of its weaknesses. However, when the two are in combination a compromise in mowing heights is perfectly logical. Actually, the level of fertility is as important as the mowing height. If the level of fertility is kept high you will find that both grasses will do well at medium height.

Q. What is the most effective chemical that you know of that will help kill *Poa annua* in Seaside Bent Greens? (N.M.)

A. To date, the most effective chemical to help reduce *Poa annua* in Bent Greens is arsenic. Arsenic may be applied either as sodium arsenite or as lead arsenate. Lead arsenate is easier and safer to use. It consists primarily in applying 10 lbs. of arsenate of lead to 1,000 sq. ft. spring and fall during the cool season and continuing the applications until you get results.

Sodium arsenite is best applied as a spray using a liquid preparation. A safe way would be from one 1/2 to 3/4 ozs. per 1,000 sq. ft. used every 10 days to two weeks during a cool season when *Poa annua* is active. It also may be applied by using slightly higher rates, perhaps up to 1 oz. per 1,000 sq. ft. mixed with sand or dry topdressing as a carrier. Frequency of application is the same as for spray.

(Continued on page 95)

## Baldock-Designed Courses Change Landscape of Nevada, Northern California

Keeping up with Bob Baldock, the ubiquitous architect who draws up golf course plans in Fresno, Calif. for the whole state of Nevada and much of Northern California, requires a combination of helicopter, earth moving machine and possibly, in some cases, pack animal. With upwards of a dozen courses on the drawing boards, under construction or newly completed, Baldock, in the last six months or so, has been making a one-man project of changing the face of the landscape between the Utah-Nevada border and the Pacific ocean.

In Nevada alone, Bob, since late last summer, has had a hand in the construction or planning of nine courses. At Wine-mucca, Carson City and Las Vegas he has completed either 9- or 18-hole courses in recent months and, at the present moment, is working on layouts in Ely, Henderson, Fallon and Lawton Springs besides two others in Las Vegas.

### Busy in California

His Northern California activities take in planning or construction work on courses in Bakersfield, Tulare, Humboldt, Santa Rosa, Delano and his native Fresno. In addition to this, Restless Robert as he is known among fellow architects, has bids in on at least a half dozen more projects.

A former pro who got into the architectural end of golf 30 years ago, Baldock is a jet-age operator who puts 100,000 air miles behind him each year in making the rounds of his far-flung working sites. If more proof is needed to show that practically all of Bob's waking moments for the last three decades have been taken up with golf, he was until lately owner of the 9-hole Sky Ranch course in Fresno.

### Michigan Pro Dates

Michigan Section, PGA, has released the following state tournament dates: July 28—Pro-Am Championship, Battle Creek CC; Aug. 23-25, Michigan Open, Edgewood GC; Sept 22—PGA Championship, Birmingham CC.

### Makes Early Bid

Officials of Putnam CC, Mahopac, N. Y., the new million dollar club that will open in May, have instructed its pro, Doug Ford, to start negotiating for the 1960 PGA championship. The course is 6,750 yards long.

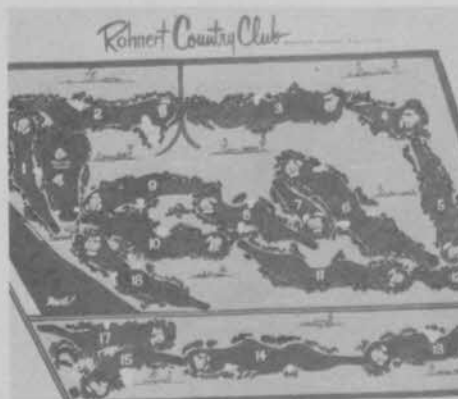
### Three of a Dozen



Humboldt Country Club



Lawton Springs Country Club



Rohnert Country Club

### College Tournament

University of Houston will stage its third annual Southwestern Invitational tournament Apr. 18-20 at Pine Forest CC in Houston. Golfers from 16 colleges and universities will participate in the tourney.

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**HERMAN BORSHARDT, Dallas,**

superintendent of the Northwood Country Club, a user of "Tersan" since 1941, wouldn't try to maintain his course without Du Pont Turf Fungicides. They give superior disease control, economically, and with maximum safety to turf.

**TERSAN<sup>®</sup> 75** Turf Fungicide • **SEMESAN<sup>®</sup>** Turf Fungicide

# Here report superior Du Pont Turf Fungicides



**E. R. STEINIGER,  
Clementon, N. J.,**

superintendent of the Pine Valley Golf Club, has been using Du Pont "Tersan" for over 14 years on a regular preventive schedule to keep greens free of disease. He finds "Tersan" economical, easy and safer to use.

---

**THE DAWSONS, Jr. and Sr.,  
N. Y. to Florida,**

combine over 50 years of turf know-how:

Tom, Jr., at the Country Club of Virginia;

Tom, Sr., Palm Beach Country Club, Florida, and Fenway Golf Club, N. Y. They agree on Du Pont Turf Fungicides for effective disease control under widely different conditions.



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## Protect greens with Du Pont Turf Fungicides

Superintendents all over the country get outstanding control of turf diseases with Du Pont "Tersan" 75 and "Semesan" Turf Fungicide in combination. This is a most effective way to guard greens against common fungus diseases

—brown patch, dollar spot and snow mold—with maximum safety to turf. Both "Semesan" Turf Fungicide and "Tersan" are packaged separately for tank mixing and are easy to apply with regular spray equipment.

**DU PONT VPM SOIL FUMIGANT** . . . use Du Pont VPM before seeding new greens, tees and nurseries to kill germinating weed seeds and nematodes. VPM is convenient and easy to use, no tarpaulin needed.

*On all chemicals follow label instructions and warnings carefully.*

**VPM** Soil Fumigant



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BETTER THINGS FOR BETTER LIVING  
...THROUGH CHEMISTRY

# Surprenant: World's Longest Course



Bob Grant, construction supervisor, will stay on as Surprenant Supt.

Measuring 8005 yards from the back tees, the new Surprenant National G&CC of Massachusetts, now about 75 per cent completed, will be the world's longest golf course.

Located at Bolton, 38 miles west of Boston, this de luxe layout is the brainchild of Albert H. Surprenant, owner of the Surprenant Manufacturing Co. of Boston and Clinton, one of the largest manufacturers of specifications plastic insulated wire and cable for electronic guided missiles and aircraft.

## Aim for Perfection

From the inception of the course, perfection in construction and maintenance has been an overriding consideration. When the owner retained the writer as course architect he stated his intention of setting up an advisory committee of non-members to assist in all phases of design and construction.

Under the leadership of Ralph Sawyer,

## Five Sets of Tees on Each Hole

## Make 8000-Yard Layout Fair Test for All Types of Golfers

By GEOFFREY S. CORNISH

well known amateur golfer of Worcester who has tested the efforts of golf architects on both sides of the Atlantic for some 35 years, the committee included another amateur golfer, Wally Helstrom of Shrewsbury, and touring professional, Paul Harney, who has represented the not yet completed course on the circuit for the past two seasons.

To insure that no maintenance aspects were overlooked two course supts., Sime Braio of the Worcester (Mass.) CC and Manuel Francis of the Vesper's CC, Lowell, were included on the committee. In the early planning stages Bob Grant, formerly of the Wayne (N.J.) CC and a graduate of the University of Massachusetts green-keeping course was appointed construction supervisor and permanent Surprenant supt.

## Committee, Architect Team Up

From the start, the writer's plans and specifications were closely studied and discussed by the advisory committee, the owner and supt. One result has been that every known skill and technique in growing of golf grass has been utilized so that there are no known constructional defects in greens, tees, fairways or traps. It is the feeling of the architect that although this arrangement involved a great amount of discussion and argument it is lending to the perfection desired by the owner.

Several pioneering features, having a direct bearing on course maintenance, are the results of these discussions:

(1) Fairway water system is being set up to pump 700 gpm at 110 lbs. pressure. While this is not too unusual, the entire system except for the main is being made with a special grade of plastic pipe.

(2) At each tee and green, parking spaces are provided for electric golf carts.

(3) A network of gravelled maintenance



roads is being installed through woods remote from playing areas, but all lead to destinations on the course.

(4) Teeing surfaces average 8,000 sq. ft. or better. This is about 1½ times the average green size at many clubs.

(5) Vesper's bent has been planted on the greens and on a 20 foot apron surrounding each. This is a strain of velvet developed by Manuel Francis at Vesper's CC and subsequently tested for several years in Dr. DeFrance's plots at the University of Rhode Island.

#### Plenty of Room Left

Although the Surprenant tract of land includes over 500 acres only 210 were actually used for the playing areas, clubhouse grounds and practice areas. Selection of land was made with variety in mind as to elevations, scenery, terrain and soil.

Included in the 210 acres are 110 of gently rolling terrain, 35 of an abandoned golf course, 30 of an old airport, 15 acres of grazing land and 20 acres of a deserted rifle range. Selection of different types of terrain has permitted great variation in the holes and balance has been achieved by dividing different terrains more or less evenly between the two nines.

Two landscape features designed personally by the owner and built by Bob Grant and his crew include a chain of small lakes and a picturesque set of rockeries and grottos. The lakes are connected by landscaped waterfalls placed so that the falling water catches the light of the setting sun during the twilight hours of golf.

#### Five-In-One

An immense amount of discussion has arisen among New England golfers as to the merits of an 8000 yd. course. As critics have pointed out, only a small percentage of golfers can possibly enjoy such yardages. Actually, however, with five sets of tees the Surprenant course is five courses in one and players can use the set of tee positions they normally play at their home courses.

While it is not within the scope of this article to deal with the overall architecture of the course or its individual architectural features a card is shown below to provide some idea of the variety of golf offered.

Hole	Super Champ.	Champ.	Long	Reg.	Short	Par
1	405	385	370	355	350	4
2	585	560	525	510	490	5
3	495	445	435	425	400	4



Albert Surprenant, owner, and Geoffrey S. Cornish, architect, check plans at National.

4	205	170	150	150	140	3
5	645	600	565	530	510	5
6	480	415	395	380	350	4
7	265	200	185	165	135	3
8	410	390	375	360	340	4
9	480	430	415	400	365	4
Out	3370	3595	3425	3275	3080	36

Hole	Super Champ.	Champ.	Long	Reg.	Short	Par
10	465	415	390	370	360	4
11	470	430	410	390	350	4
12	645	540	500	455	450	5
13	265	225	200	170	135	3
14	435	400	390	370	350	4
15	460	430	400	370	350	4
16	265	200	195	190	165	3
17	420	415	400	400	380	4
18	610	510	500	490	445	5
In	4035	3565	3385	3205	2975	36
Out	3970	3595	3425	3275	3080	36
Total	8005	7160	6810	6480	6055	72

The extent to which Massachusetts' new National course will be the forerunner of the golf course of the future is anyone's guess. Many features are revolutionary and it will be years before their practicability will be adjudged. Surprenant is an interesting experiment, well worth watching.

#### Sound Financing

Financial statement of the Royal Canadian Golf Assn. for 1956 shows the Assn. to be in sound shape. Income exceeded expenses by \$5,219 for the year and increased the surplus to \$49,000. However, total revenue was down from 1955 by \$3,400 while expenses showed a slight increase of \$300.

Make Sure Your Club Officials  
Receive Golfdom in 1957  
See Page 126

# 136 Supts. Attend Southern Conference



Opening day session at the Southern Association's two-day turf clinic.

All records for attendance at the Southern Turfgrass Association's annual two-day clinics were completely shattered this year when 136 supts. registered for the conference held at the Colonial CC, Memphis, Feb. 25-26. Sponsors of the event thought they had reached the ultimate two years ago when 103 persons attended the sessions.

An excellent array of speakers in addition to a golf tournament, the first ever held at a Southern conference, are credited with having attracted the record turnout. Speakers included William H. Daniel, Marvin H. Ferguson, Charles G. Wilson, B. P. Robinson, Tom Mascaro, Jack Kolb and Mike Klaiich, Jake Fondren, Colonial pro, supervised arrangements for the tournament.

Officers who will direct the Southern assn. throughout 1957 are: Jim Hamner, Memphis CC, pres.; Harold Eller, Old Hickory (Tenn.) CC, vp; Reg Perry, Choctaw, Inc., Memphis, secy.-treas.; and the following directors: E. Winfield Allen, Luke Nunley, Marion Scobell C. D. Edwards, E. D. Guy and Charlie Danner. The 1958 conference is scheduled for Chickasaw CC, also in Memphis.

## Innovations Introduced at Midwest Turf Meeting

Two innovations were given a trial when the Midwest Turf Foundation held its annual conference at Purdue University, Lafayette, Ind., Mar. 4-6.

On opening day, speeches and panel meetings were passed up in favor of getting

supts. to circulate among exhibits which interested them, and to discuss common management problems with other turfmen. Conducted on a strictly informal basis, the day's program had the wholehearted approval of the large delegation of supts. attending the conference.

On the second day of the meeting, newcomers to the turf business had the option of attending either "Basic for Beginners" sessions or sitting in with more experienced supts. at more advanced discussions. The new idea of slanting information to new men on a less technical basis than it is imparted to the older supts. was so well received that it will be repeated next year.

William H. Daniel, Purdue University agronomist, was chairman of the Midwest conference and had the following speakers and panel leaders lined up for the three-day clinic: J. R. Watson, A. R. Bertrand, H. B. Musser, Stan Barber, Mal McLaren, Charles Wilson, Dan Wiersma, Fred V. Grau, R. C. Pickett, R. Duke, Burton Kiltz, N. Goetze, J. Gallagher, M. Britton, Arden Jacklin, M. C. Schurtleff, Don Schuder, Marion Mendenhall, M. H. Ferguson, Ray Phillips, Leo Feser, W. L. Nelson, E. Yoder and Doyle Mullen.

## Antiquated Equipment

The story of unsatisfactory course maintenance at too many medium-sized and small clubs is told by the pro-supt.-mgr. of a New England club who writes GOLF-DOM: "The golf course equipment is so antiquated that breakdowns and repairs consume many hours that could be used in getting the course in good condition."