



Montclair's clubhouse soon will have the players of an additional eighteen holes alibiing and rejoicing within its walls.

RUSH COURSE CONSTRUCTION WITH Modern Machine Methods SETTING EFFICIENCY RECORD ON JOB

By Lester H. Burns

THE Montclair (N. J.) Golf Club has long been noted as one of the outstanding courses of the New York metropolitan district. Located on the western slopes of the Orange Mountains, it covers a rugged, broken terrain eminently suited for golf.

The Montclair course was originally 18 holes, but the large number of active golfers in the club made the construction of an additional 18 holes necessary. The first half of these new holes was completed several years ago; the second nine is now under construction and will be open for play in the spring of 1930.

The portion of the course now under construction is located on a heavily wooded slope. There were many boulders and outcropping rock ledges which had to be removed, many trees which had to be uprooted, and a number of small hills and streams which it was necessary to re-

locate. It will be appreciated that this is a big job requiring the use of the very latest equipment.

The removal of the trees and stumps was in itself a big job; but the real task of making the course began after the fairways had been cleared. Small hills and streams were often relocated, and it was necessary to install much til-

When a new course is to be constructed in a metropolitan district where land values are high it is wise, particularly where a tremendous amount of excavation and fill-in must be done, to employ the latest and best machinery for the job, even though construction costs are thus increased. By this policy valuable property can often be put in play a full season earlier than if ordinary construction methods are employed.



Clearing done in record time put ninth fairway at Montclair in shape for effective seeding.

ing in order to provide proper drainage.

Wherever possible, natural hazards were retained; but as is to be expected on a course of this caliber, many artificial ones were created. It is expected that these new holes will be thoroughly in keeping with the existing twenty-seven.

A Pawling & Harnischfeger No. 600 gasoline-driven excavator was used to excellent advantage for moving dirt from one place to another. Even though it was a dry summer, the ground was soft in many places, and trucks could not be used. As a consequence, a No. 20 Caterpillar tractor was used to haul Easton No. 40 rollover carts. In this way dirt was handled very rapidly.

As is usual in districts where interesting golf courses are found, rock was encountered at very shallow depths; frequently only a few feet below the surface. Much drilling and blasting were necessary, and for this purpose Ingersoll Rand portable compressors, "jackhammer" drills, and paving breakers were used. It has been estimated that each of the portable compressors did the work formerly requiring ten or twelve men. Sizeable outcropping ledges were drilled and blasted in a day. Operating and maintenance costs were particularly low. Drill steel was sharpened on the job.

These summer months of 1929 will long be remembered for their prolonged drought. The Montclair fairways suffered as did all others in the section. To provide against a similar situation, the Montclair Club decided to install a water supply system for the fairways, as well as for the greens. A 6-in. cast iron pipe line was installed along each fairway and tapped at various points.

An F. C. Austin drainage excavator was used for trenching. This machine cut saplings and roots without tearing out the sides of the trenches. Frequently it would strike boulders and ledges; and when this happened, the portable compressors and "jackhammers" were immediately hustled to that point. A few shots generally allowed the excavator to continue.

The Montclair fairways have always been good because of the excellent top soil, and it is expected that the nine new holes will be equal to or better than the old ones. Extreme care has been taken by the contractor in the grading and drainage. The rainfall in this section is naturally heavy, and the wooded areas adjacent tend to store up moisture and feed it gradually to the sloping hillsides below.

Considerable care is being taken with the seeding of the course, and with favor-



Upper left—A jack-hammer drill cut costs in handling sub-surface rock.

Upper right—Minimum of man-power required by this trio of gas shovel, tractor and dump cart.

Lower left—A trench excavator made short work of the water and drain pipe ditching.

Lower right—The portable air-compressor paid its way in handling rocky soil.

able weather the fairways should develop rapidly.

Work was started in the early spring of 1928 and has progressed steadily since that time. The contractor, Mr. Charles Neal, of Westwood, N. J., was favored with an open winter during 1928-29, and

very little rain during the past summer. These favorable conditions have made it possible to finish the work within such a short time.

The cost of these new holes is estimated to be \$175,000. The architect is Mr. Charles H. Banks of New York, N. Y.

NO sounder advice can be given a group of individuals considering the founding of a club in a small way, than to make sure of their layout first, to see that it will grow with the club and not have to be scrapped as the course is developed. It has most likely come within the observation of many greenkeepers and course su-

perintendents who are called in for consultation that the club that starts off without a proper plan of expansion is put to greater expense and inconvenience during the enlarging of the course, than the club which at slightly higher initial cost, made provision for subsequent development.—C. A. Tregillus.

VOTE FOR BUSINESS ADMINISTRATOR AT Atlanta Meet of P. G. A. AS ANOTHER FORWARD STEP OF THE PROS

ATLANTA, GA.—Those of the pros who have been earnestly of a mind that the pro cause would advance further, faster and firmer with a business administrator to handle the multitudinous details of the pros' collective and individual business affairs now are on the threshold of having their dream come true. The annual meeting of the P. G. A. of America, held at Hotel Ansley, Atlanta, November 11-13, voted an increase of annual dues to \$50 to put into operation a business office under the management of some capable notable of the golf world who will work out the details in association with the P. G. A. officials. This \$50 is net to the association and is in addition to whatever sectional dues the various P. G. A. groups have for their respective bodies. Now the job is to get the right man and President Pirie and his colleagues already are on a still hunt for the administrator.

The amount will result in a substantial sum for the campaign chest of the P. G. A. On the present basis it would result in approximately \$60,000 in dues alone being made available for the business administrator, his staff and the activities of the administrative headquarters. As a matter of fact that figure may be cut down somewhat during the first year. Contrary to the public misconception of the pro's financial status, the young fellow in the smaller town is sailing fairly close to the line between black and red and he is apt to think that 50 is a figure to be spoken only by the Allies-Central Powers banking authorities, astronomers or switch-yard recorders of box-car identities. But one of the policies on which the P. G. A. officials intend to have the business administrator work is that of substantial help to the boys in the curfew towns as well as in the metropolitan territories. So it is expected that a practically unanimous participation in the increased dues idea will be forthcoming shortly after its results have been noted.

Pirie Pilots Pros

Pros have been working up to the business administrator point for some time.

They constitute one of the most important bodies of professional athletes in the world, not only numerically but in the extent of their financial dealings. As their elected and unpaid officers have the usual thankless task of working their heads off for their comrades, and at the same time must do full justice to their own jobs, the advent of a business administrator will be hailed with joy by those officials to whom "damned if you do and damned if you don't" is an experience rather than a phrase. At this crucial point in the pro advance Alex Pirie was elected president of the association for the fourth time. The boys were taking no chances on swapping steeds in mid-stream and the veteran war horse from Old Elm was enthusiastically re-elected.

Sectional officials who constantly have to contend with the problem of getting their groups closely knit together now are confronted with the job of telling their members in intimate and definite detail the plan encompassed in the business administrative move, and keeping the boys all lined up for demonstrating and profiting from pro unified strength.

Act on Buying Plans

That complex matter of pro group buying came in for much discussion. It was stated at the P. G. A. meeting that the British pro buying organization (composed of British P. G. A. members, but not a part of the British P. G. A.) last year made a profit of approximately \$15,000 on a capitalization of around \$60,000. Just what part turn-over played in this showing was not determined from the British statement, nor were other details of the plan set forth. One point that may remove manufacturers' fears was plainly brought out in the formal and informal discussions. The pros have no desire to gouge the manufacturers out of any profits but they do claim that according to the makers' statement stores are buying goods at lower prices because of economies of quantity buying for spot cash. For that reason, they state, they see no reason why the pros should not share the same mutual

saving with the manufacturers. At this point the vital matter of distribution costs enter to confuse the pros in their deliberations. After some strenuous and persistent prying and thought for more than a year even Ogg and his coadjutors confess they are still in the twilight of the situation. But that's to be anticipated for this juvenile giant of all sport business, golf, has plenty of all denominations playing blind man's buff.

Ogg, Charlie Hall and George Sargent were named by the Atlanta conclave to confer with the club and ball manufacturers' associations to see what could be worked out that would make money for all concerned by reduction of preventable wastes in selling and distribution and without the sacrifice of either the manufacturers' individual selling conquests or the pros' position as purveyors of distinctive golf merchandise. And there, brethren, is one of the many tangles that the business administrator has to unknot—heaven be with him!

One of the moves made by the P. G. A. convention to further identify the well-qualified pro was to establish a junior class of professionals who are competent as assistants but who must serve two years before becoming eligible as Class A professionals.

Closer relations with the U. S. G. A. for the good of the game were discussed in detail by the delegates. Especially was reference made to a standardization of tournament rules that would simplify matters for all contestants and officials. Announcement was made at the meeting that the U. S. G. A. had taken steps to admit complimentary to all National Open events P. G. A. members who were not contestants.

A prayerful finale to the jam on the arrangements for this year's P. G. A. championship was pronounced by the meeting. The meeting thanked J. A. Patterson for his work in re-routing the event to Hillcrest where it met a welcome and satisfactory financial guarantee, after the misunderstanding that jarred the first plans for the championship into the limbo. The switch was occasioned by just one of those things that are bound to happen in the best regulated families.

Howard Beckett, pro at the Capital City club of Atlanta, was the guardian angel of the visiting gutta and leg men. The South-eastern P. G. A. entertained the delegates and the press at the Capital City town club where the gastric juices of the damned

Yanks and their hosts held a field day on some justly famed southern cooking. Pastor Pirie cut loose with his sweetest strain of hieland oratory in paying tribute to Banging Bobby, Atlanta's boy wonder, as a worthy occupant of golf's all-time Hall of Fame. O. B. Keeler, Bob's shadow, responded by telling of the sincere lofty opinion Jones held for the pros as prime sportsmen. Bert Way, Jack Patterson and Jack Mackie told of the pro seniors' organization in New York and Chicago with sprightliness, pride and hope. Charlie Hall also knocked a few verbs and adjectives hole-high in extending the south's welcome to the delegates.

It was found impossible to wind up the meeting in the two days scheduled, so an extra session was held Wednesday morning. In the afternoon a hurry-up trip to Stone Mountain to see the huge and impressive Confederate memorial under construction was arranged for the convention attendants by Beckett.

P. G. A. Elects Officials

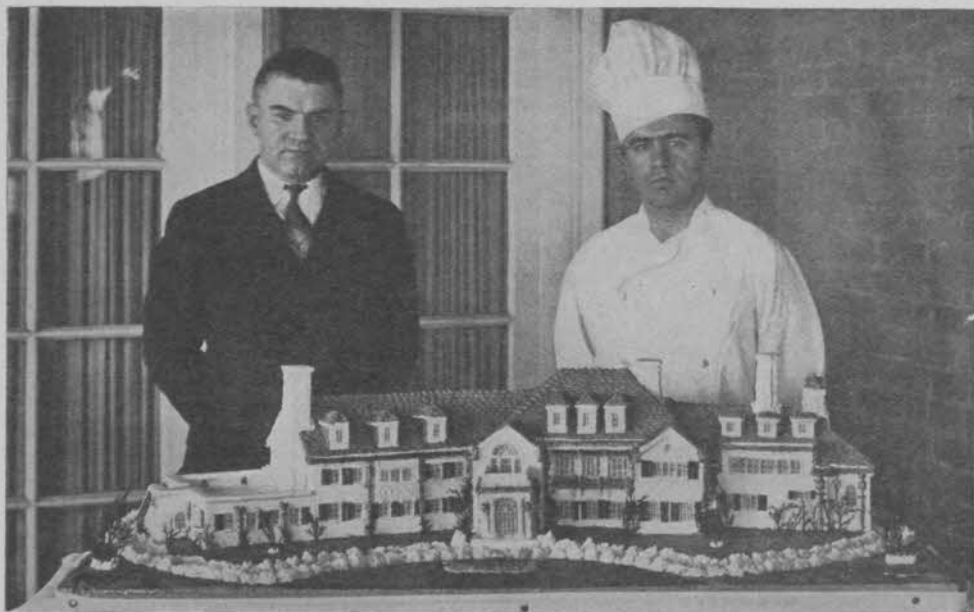
At the Atlanta meeting Alex Pirie of Old Elm club, Lake Forest, Ill., was named president of the Professional Golfers' Association of America for the fourth consecutive term. Jack Pirie of Woodmere (L. I.) club was elected secretary. Jack Mackie of Inwood (L. I.) Country club was re-elected treasurer.

Vice-presidents elected: Willie Ogg, Worcester (Mass.) C. C.; Bert Way, Canterbury club, Cleveland, O.; Frank Minch, Del Paso Country club, Sacramento, Cal.; J. R. Inglis, Fairview C. C., Elmsford, N. Y.; Charles Hall, Country club of Birmingham (Ala.).

Lake Forest, Ill., the Chicago north shore's gold coast suburb, was named as the place of the 1930 annual meeting, with Deerpath Inn as headquarters.

The 1931 Ryder Cup matches were awarded to Scioto Country club, Columbus, O.

Award of the 1930 P. G. A. championship was not made at the Atlanta meeting, although substantial propositions from several cities were submitted to the pro governors.



At the left is Manager J. L. Sweitzer of North Shore, with his talented aide-de-camp who made the sugar model of the club's home for the centerpiece at its annual meeting.

LOSE MONEY TO MAKE PROFIT ON Feature Dollar Dinner THAT BRINGS BUSINESS TO NORTH SHORE

By Jack Fulton, Jr.

ABOUT half way through the lead article in last month's GOLFDOM appeared the statement that a certain unnamed club in the Chicago district had served a full-course table d'hote dinner to its members during this past season, had charged only \$1.00 for it, and had ended the year with a profit on dining-room operation.

Our statement was a trifle strong for a number of club managers who have spent many years in the business and have never yet been able to drop below \$1.50 without a firm conviction that an appalling deficit was inevitable. They invited GOLFDOM to prove its statement.

J. L. Sweitzer is the manager who serves the dollar table d'hote dinner. He is the manager of the North Shore Golf Club and when I found him in his office and had introduced myself he beat me to the draw.

"I suppose," he said, "you're another one

who wants to find out about my table d'hote dinners and how I can make a profit at a dollar? The word got out and I'm getting about ten phone calls a day from managers asking me how I do it."

"That's right," I said, "how do you do it?"

"I don't! I've never said I'm showing a profit on those meals! But here's what I am doing: I'm serving a dinner for \$1.00 that is the equal of any \$1.50 meal you ever ate and at the same time *operating the dining-room at a profit*. That's different."

"How did you do it—raise your a la carte prices?" I asked.

"No, that wasn't it. We left them where they were. It was a case of increasing patronage. Let me give you an outline of what happened.

"North Shore ranks very high in the Chicago district. While it isn't a rich

man's club, it isn't a poor man's club either and price doesn't enter into North Shore's operating problems anywhere near as much as in many younger clubs. Our members will pay a fair price, but they demand the best.

"Before this past season, the dining-room had been doing a comfortable business, charging \$1.50 for a dinner almost identical in every respect to the one they now get for \$1.00, and charging \$1.75 for a dinner somewhat more elaborate—you know, chicken or steak—with an appetizer to start. On that basis, they were feeding fair-sized crowds on week-ends, but doing very little business during the week.

"I suppose the Board of Governors came to expect a deficit in the dining-room at the end of the fiscal year, just as a matter of unavoidable course. At any rate, when a new House Committee chairman was elected and called me in last spring, he told me he was more interested in satisfying the members than he was in showing a profit in the dining-room. 'Give them,' he told me, 'a dollar dinner at night.' 'It won't be good enough,' I told him. 'You can't serve a good one for less than \$1.50.' 'Then give them a \$1.50 dinner for a dollar,' he told me. 'What I want to see is satisfied members. If we can lure them out here by serving extra fine dinners, they'll patronize the other departments as well, and the increased business in those departments will more than make up any

loss we have to take on the dining-room.'

"That's why the North Shore members are getting a \$1.50 meal for \$1.00. And I wish you could have seen how business picked up! We haven't the figures yet on just how many meals we served, but you'll get an idea when I tell you that the total volume of business was greater this year with \$1.00 meals than it had ever been with \$1.50 meals.

"It was nice to be told by my chairman that he expected me to suffer a loss in the dining room, but I didn't think that was a permit to be extravagant; instead I looked around for some way to economize. I found it in the store-room.

"It was in the matter of food control. Before this year, if a new delivery of, say, tomatoes was made, the new lot were liable to be put down on top of whatever supply of old ones we had, and when the chef came to the storeroom for tomatoes, he naturally took from the top of the pile. There was a lot of spoilage of fresh vegetables and other perishables because of this.

"I took a young fellow who was hired to do odd jobs around the clubhouse and made him storekeeper. It was up to him to keep track of our food supplies and see that the old stuff was used up before the new was touched. The result was that only once in a while did we have to throw anything out. In fact, the garbage man came into my office this fall and complained that he couldn't afford to come out unless there was more garbage for him to pick up!

"Then I got together with my chef. In all my experience as a manager, I have never had such a valuable man; I'd be lost without him. It wasn't hard, with his help, to work out a system on the dinners. We decided to serve only one ready entree each night, and let the other choice be quick items—cooked to order. To give a wide choice and at the same time standardize the menu, there was to be one egg dish, one fish, one grilled meat, and one cold plate daily. There was to be choice of an appetizer or soup, there were two fresh vegetables, a tasty fresh salad, and a wide choice of desserts.

"The advantage of only one ready dish is that there was very little leftover. It was easier to prepare the right quantity and the leftover could be served the next day; if there were two or three leftovers, it would be hard to work them all in on the following day."

Come Out
some evening
and try our

\$1⁰⁰ Dinner
at the club



Our House
Committee
claim that the
dinner served is as
good, if not better,
than any \$1.50
Dinner you
ever ate

North Shore advertises its dollar dinner
on back of its weekly house-organ.

Sweitzer reached into a folder and handed me a sample menu. It happened to be the one for Thursday, August 15th, and I was assured that it was typical of the dollar dinners he has served all year. It read:

Choice of

Assorted Canape

Chicken Broth with Noodles

Cold Consomme in Jelly

Mixed Olives

Garden Radishes

Choice of

Broiled Lake Trout with Lemon Butter

Omelette with Fresh Peaches

Grilled Loin Veal Chop, Grilled Tomatoes

Grilled Half Roast Milk-fed Squab

Chicken with Apple Sauce

Roast Prime Ribs of Beef, au Jus

Cold Ox-Tongue, Swiss Cheese, and Jelly

New Spinach in Cream

Rissole Potato

Fresh Vegetable Salad, Mayonnaise

Apple Pie

Lemon Meringue Pie

Jelly Roll a la Mode Ice Cream

Fresh Peach Sundae

Cantaloupe

Honey Dew

Watermelon

Coffee, Tea, Milk, Ice Tea

"You'll notice," Sweitzer pointed out, "that I have two ready dishes on the list, but that is because I had some roast beef left over. The day's dish is the half squab chicken; another day it might be steak. My food cost is 51 cents.

"Outside of packaged goods and staples, I do all purchasing and I think I buy as cheaply as any of my manager friends. Everything must be of finest quality. As an example, I pay 37 cents for beef where I could get it for 32; but the five cents extra assures the best and North Shore, as a result, has a reputation for the finest roast beef in the district.

"It is a dining-room policy that a member can have a second helping if he wants it of appetizers, soups, vegetables and desserts and we'll give him more meat if he asks for it. The members don't abuse this policy and only ask for more if they actually want more. In the end it all averages out, because ten people will tell the waiter to omit the soup or the salad or dessert to one who will ask for a second helping. And it goes a long way toward keeping the members happy to know that there is more in the kitchen if they want it."

To get down to figures, Sweitzer started the spring with a loss of approximately

\$3,000, caused by the club's decision late last fall not to remain open during the winter months, a practice of former years. Sweitzer had not expected the close-down order and had kept his full crew at work. The deficit was composed almost entirely of salaries.

There were some added salaries this year. When Sweitzer put that odd-job boy in charge of the storeroom, the boy's salary was charged against the dining-room, and earlier in the season, the club decided beverage sales in the locker-rooms belong to the dining department and therefore the wages of the "bartender" who dispenses carbonated waters and ginger ale was chargeable to the dining-room. Ordinarily, beverage profits would have covered this man's salary adequately, but about the middle of last summer clubs in the Chicago district were forced by authorities temporarily to discontinue beverage sales in locker-rooms. In North Shore's case, the beverage sales loss amounted to over \$2,000.

Yet despite the \$3,000 red figures with which he began operations this spring and the added salaries, Sweitzer finished the year with the dining-room showing only \$1,000 loss. Had he been able to start from scratch, his department would have showed \$2,000 profit.

Next year, beginning without the opening deficit, he expects to do even better. "It takes time," he explained, "to convince members there isn't a nigger in the woodpile when you offer them food as good as we gave them and only charge a dollar. But they're sold on the facts now, and next summer I expect to see a lot more members bringing their families out for dinner, especially on week-ends and maid's-day-out. That's going to mean increased business and increased profits."

FOR the most part, course architecture and construction should follow along conservative lines; efforts directed towards blending the natural features into the layout are better than creating a course topography which is at variance with the surrounding terrain. The use of striking physical features artificially produced, involving the removal of large quantities of earth, is not favored. True, some large operations must be undertaken in the matter of clearing through timber and rock, but this work is not for the purpose of creating architectural adornment.—C. A. Tregillus.

ANNOUNCE LIVELY SCHEDULES FOR Greens Short Courses AT MASSACHUSETTS AND PENNSYLVANIA

SIGNS look bright for a decided extension of the university short courses in greenkeeping this winter. Greenkeepers have taken to these courses and found them highly valuable. Massachusetts Agricultural college, where Lawrence S. Dickinson presides over the greenkeeping short course, already has announced details of its 11 weeks' winter school beginning January 2. Dickinson and his associates have earned themselves the deep gratitude of the golf field for their pioneering work in making a happy and productive combination of the scientific and practical aspects of greenkeeping work. Every man we have met who has studied with the Massachusetts instructor has been enthusiastic about the dollars-and-cents merits of the course.

An idea of the character of the course may be obtained from the following schedule:

Motors, one laboratory, one lecture, 10 weeks; botany, one laboratory, two lectures, 10 weeks; water systems, two laboratories, three lectures, 6 weeks; drainage, two laboratories, three lectures, 5 weeks; equipment, three laboratories, two lectures, 6 weeks; managerial problems, three laboratories, two lectures, 5 weeks; grasses, three laboratories, two lectures, 6 weeks; cost keeping and analysis, three laboratories, two lectures, 5 weeks; soils and fertilizers, two laboratories, two lectures, 10 weeks.

In addition to this program there is one hour set aside each day to take advantage of the opportunity to hear the many visitors who come to the course, and to have a forum discussion. Each year, now, the course gets daily visits from men who are well versed in greenkeeping, or some phase of activity connected with it. These men never get away unless they give a talk either formal or informal.

M. A. C. Roster Filled

An idea of the popularity of the course at M. A. C. is obtained from the following press release sent out by the institution.

"Four months ahead of the opening date of the 11 weeks' winter school which

begins January 2, 1930, the special course for greenkeepers is completely filled, with a long waiting list if subsequent vacancies should occur, according to a recent report from the College Short Course Office. M. A. C. is offering one of the best courses of its kind in the country in this new field of golf course management, and because of the large demand has to limit enrolment rigidly and can accept only professional greenkeepers or men who have worked on golf courses and are recommended by greens-committee chairmen.

All sections of the country are represented by the application list which includes:

G. H. Cassell, Balboa Heights, Canal Zone, Fort Amador G. C.; Harry B. Burns, Jr., Bradford Woods, Pa., Bureau of Parks, Allegheny County; William Rueck, Evanston, Illinois, Cook County Forest Preserve course; Robert Roy, Lake Placid club, New York; Lloyd G. Stott, Fall River C. C., Mass.; Thomas H. Howe, Wellesley C. C., Mass.; Walter Howe, Wellesley C. C., Mass.; Robert McGregor, Hastings-on-Hudson, N. Y., St. Andrews G. C.; Joseph Johnston, Belmont Springs C. C., Mass.; Charles A. Earle, Spencerport, N. Y., Westridge G. C.; Charles T. O'Keefe, Charles River C. C., Mass.; William F. Stuper, Winnetka, Ill., Sunset Ridge C. C.; George Picard, Plymouth G. C., Mass.; Albert B. Larson, Rockport, Me., Magunticook G. C.; Harry Burkhardt, Rocky River, O., Butternut Ridge G. C.; James M. Pauli, Three Rivers, Mich.; J. Macnamara, Jr., Pittsburgh, Pa.

At Rutgers university, New Brunswick, N. J., F. J. Helyar, director of short courses in agriculture, advises that details of the greenkeeping short course will be made public some time in November. Under the management of Mr. Helyar and Dr. Sprague, the Rutgers course made a splendid start last season and was well attended by greenkeepers and professionals from widely separated parts of the country.

Plans of the next short course at Pennsylvania State college where a fine short course was conducted last season by the institution's staff in association with the

Pennsylvania Greenkeepers' association are given in the following press release:

Schedule Penn State Course

Announcement of the short course and conference for greenkeepers to be held at Pennsylvania State College, School of Agriculture, State College, Pa., has been made by the dean of the school, 111 Agriculture building. Enrollment is limited to the first 30 who apply.

The preliminary announcement gives the following details of the course which will run from February 2 to 28.

The aim of this course is to give instruction in the broad underlying problems that have to deal with practical turf management. Anyone who is interested and who can read and write will be eligible. The course is especially designed, however, for those who have had some experience with fine turf management. During the first three weeks the subjects listed below will be studied. The fourth week those attending the short course will be expected to attend the Greenkeepers' Conference.

The courses will be taught in the college classrooms and laboratories.

Expenses

Living expenses and college fees for the four weeks need not exceed \$60.00. The largest single item of expense is room and board, which will be from about \$9.50 to \$10.50 a week. An incidental fee of \$10.00 is payable by all winter course students. Other expenses will consist of laundry, stationery, and miscellaneous items. In some of the courses books may be required.

Description of Work

1. *Soils and Fertilizers*—Discussion and laboratory studies covering the origin, formation and physical properties of soils, and soil acidity, as well as the purchase, mixing and use of fertilizers and lime.

2. *Fine Turf Grasses*—Class room and laboratory work on classification, identification, and propagation of the important fine turf grasses, including seed identification and analysis.

3. *Weeds*—The characteristics, life habits, and control means of the various weeds common to golf courses will be studied. Some time will also be given to weed seed identification.

4. *Insects*—A brief study of the insects affecting fine turf grasses with particular reference to their control.

5. *Diseases*—A consideration of the nature of diseases and their effect on plants, together with the principles of

prevention and control. Application to turf problems will be emphasized.

6. *Landscape Problems*—Factors determining the location and layout of golf courses, a study of golf course plans; grading problems; discussion of trees and shrubs for golf courses and club house grounds; their identification, special uses, planting, and maintenance.

7. *Machinery, Drainage, and Irrigation*—Detailed study of gasoline engines, their operation, repair, care, and adjustment. The location, design, and construction of tile drainage systems. Power requirements, design, and operation of spray irrigation systems; pipe friction, pipe sizes, and pumps.

Greenkeepers' Conference

From 9:00 a. m. Feb. 24 to Noon Feb. 28, 1930

The Greenkeepers' Conference is designed for green committee chairmen, greenkeepers, and others who desire to keep informed on the most recent developments of fine turf management. The faculty committee will work with representative greenkeepers in formulating a detailed program. The major portion of the time will be given to roundtable discussions. The subjects to be considered will be essentially the same as those offered during the four weeks' short course. The speakers will be discussion leaders rather than lecturers. A prominent part of the program will be short talks by practical greenkeepers based on their own experiences.

ONE common criticism of small-town courses is that many are too short. This is due to two reasons: first, the attempt is too often made to put them on a scanty area of ground; and secondly, the original layout is invariably made by a local committee which has not done this thing before and has a natural inclination to misjudge the distance of holes. Since most of them are nine-hole size, we find that the total grounds rarely measure above 45 or 50 acres. By the time the clubhouse, driveway and parking ground are taken out, there is not sufficient room left for the needs of the course proper.—C. A. Tregillus.

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THE injuries which result in winter-kill in its many forms are caused by several agencies, but rarely, if at all, from extreme frost. Variable winter weather is more to blame than below-zero temperature, also methods in handling greens, and in the construction of greens themselves.