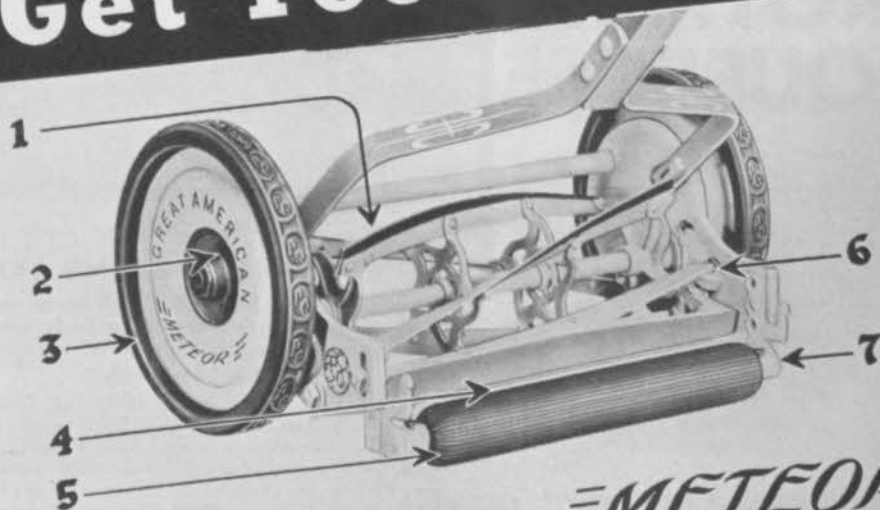


Let's Get Technical



THE **NEW** GREAT AMERICAN **METEOR**
FOR GENERAL TRIMMING EVERYWHERE

Built of Aluminum Cuts Easily and Quickly

EVERYONE knows that when it comes to lawn mowers Pennsylvania is preferred everywhere. But, let's see what is *behind* this universal preference.

Above is a light-weight mower which reflects the skill and experience of Pennsylvania's 60 years of lawn mower manufacture. This aluminum mower was *specially designed* to assure the same ruggedness and long life for which Pennsylvanias are famous. Rubber tires give maximum of traction and hushed performance.

Everything you have asked for in a mower is incorporated in the new Pennsylvanias—from the exclusive *Stay-Tite Handle* to the patented *Single-Screw Adjustment* of the lower blade. The perfection of design and construction accounts for Pennsylvania's undisputed leadership in the *Quality* lawn mower field. Pennsylvanias are used as standard equipment on outstanding parks and golf courses all over the world. Let us send you a list of these users—and also our

NEW 1938 CATALOG

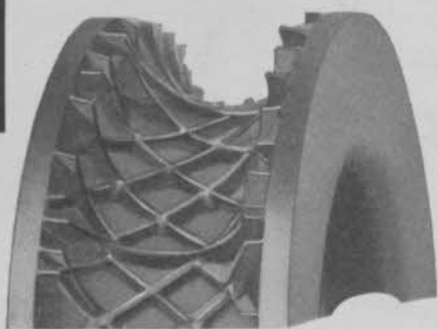
1. 5 crucible analysis steel blades, double riveted to unbreakable brackets.
2. Axles, self-lubricating. Once-a-year greasing in ordinary use.
3. Rubber tires for greater traction and quieter operation.
4. Self-sharpening Chrome steel lower blade.
5. Rubber-covered hardwood roller, quiet.
6. Patented single-screw adjustment on lower blade.
7. Unbreakable brackets, adjustable for height of cut.



PENNSYLVANIA DELUXE FAIRWAY
Unbreakable, new tubular frame, which eliminates ground wheels, permits extreme flexibility of gangs. Units in two sizes: 30 and Giant 36-inch. Pneumatic tires optional.

PENNSYLVANIA LAWN MOWER WORKS
PRIMOS (Del.Co.), PENNA.

THIS ROTARY SQUEEGEE



—is one reason why the revolutionary new

HENRY GOLF BALL WASHER

has met with instant and enthusiastic welcome throughout the world of golf.

The HENRY has entirely eliminated bristle brushes, because they scour off cover paint, become water-logged and smelly and require frequent replacement.

Instead, the HENRY employs a rotary squeegee made of pure gummed rubber, designed so as to assure thorough, safe cleansing. It is made of Latex, the toughest of the tough materials—that tells you that replacements will be few and far between.

The HENRY is not messy—will not splash. It is compact, good looking and its housing of heavy gauge pressed steel will last a lifetime.



The Henry can be attached to any "U" type post, and is made theft proof by the use of the Allen Set Screw. Every washer is equipped with a special Allen wrench and a snap for tee towel.

Solve your washer problems permanently by ordering your Henry, direct, today!

\$8.75 F.O.B. Milwaukee

Dealers are invited to write for proposition

HENRY MFG. CO.

400 S. 7th Street

Milwaukee, Wis.

Answer above ad with QUICKMAIL No. 24

SAND TRAP HANDICAP



DON'T LET HIM BLAME YOU

Ordinarily, he'll blame his high score on a lot of other things—but if he finds weeds in the sand traps, he'll blame you.

Don't give him this handy alibi!

All you have to do is dilute Dolge Weed-Killer in water according to directions and sprinkle. Penetrates deep. Kills the weeds, roots, stems and leaves. Also kills nettles and thistles in the rough. Write for details and FREE 48-page 1938 Ground Maintenance Manual.

The C. B. Dolge Co.
Westport. Conn.

Answer above ad with QUICKMAIL No. 3



SPIKE DISC

LAWN & GREEN
CULTIVATORS
(Patented)

For Greens,
One Handle
Model
(illus.)
\$27.50

With Two
Handles
\$30.00

Tractor
Model for
Fairways
\$120.00

"Use Regularly," Say
Authorities

TURF AERATION IS A NECESSITY

And SPIKE DISCS are essential for opening the soil that turf may "breathe". But that is not all they accomplish, the knife-like blades permit moisture to seep in and help prevent seeds and top dressing from being blown or washed away. Leading greenkeepers everywhere advocate their use regularly throughout the season.

Details, Prices at Your Golf Equipment Dealer or

JOHN H. GRAHAM & CO., Inc.

Sales Agents—113C Chambers St., N. Y., 268 Market St., San Fran., 565 W. Washington, Chicago
Manufactured by Stoner-Maurer Co., Monroe, Mich.
Successors to Wilder-Strong Co.

Also makers of Dunham Water-Weight Rollers

Answer above ad with QUICKMAIL No. 10

TAKE A TIP FROM ONE WHO KNOWS

There's Quality in the New
ROSEMAN SPECIAL

Based on a practical knowledge of Greenkeepers' problems, Joe Roseman, veteran greenkeeper and golf architect, has been developing fairway equipment for the past 25 years.

ROSEMAN TRACTOR MOWER CO.
EVANSTON, ILL.

" . . . the tractor which we purchased from you is giving the utmost satisfaction . . . the most practical and useful piece of equipment we possess . . . functions perfectly. Our course ranks with the best in the East and to maintain this high plane our equipment necessarily must be the best. Consequently, we purchased a Roseman Special Tractor."

Frank Stemple, Pres., Shackamaxon C. C., Westfield, N. J.

ROSEMAN *Special* TRACTOR

—in low-cost, year-after-year, stand-the-gaff performance, the Roseman Special is the outstanding buy in the turf maintenance field

LOOK AT THE PRICE **\$575**

Adaptable for all golf course work . . . powerful, dependable, economical. Sturdily built on Ford Model "A" chassis—converted by special enclosed reduction gears. Custom-built dump body operated from driver's seat. Bed made of iron-reinforced white oak. Side boards removable for hauling large pieces; provides clear view of mowers when cutting. Easy to handle . . . costs less to operate. Clubs everywhere are sold-to-the-hilt on their savings.

Roseman V-8 Tractor

Has same design and features as the Roseman Special Tractor. Made up on Ford V-8 Chassis with 85 or 60 H.P. engine as desired.

Write today for complete details and prices of performance-proved Roseman Equipment.

New ROSEMAN

3, 5 and 7 Gang Mower

With 27 refinements the new Roseman 30" Mower brings new, unmatched mowing performance. It rolls as it mows . . . insures firm, healthy, uniform turf without scalping or packing. Improved for greater capacity, better balanced operation and longer life. Now available at a new low price.

ROSEMAN TRACTOR MOWER COMPANY
2610 RIDGE ROAD . . . EVANSTON, ILLINOIS

SEED, now!

WRITE—WIRE—PHONE

QUICK DELIVERIES—HIGHEST QUALITY—LOWEST PRICES

Kentucky Blue Grass Re-cleaned Rep Top Chewings Fescue
 Poa Trivialis Special Mixtures Seaside Bent

EQUIPMENT and SUPPLIES of PROVEN PERFORMANCE

Tractors — Mowers — Seeders — Discers
 — Soil Shredders — Flags — Poles —
 Cups — Rollers . . . Nu-Green — Special
 Semesan — Arsenate of Lead — Red
 Arrow Sprays — Corrosive Sublimate —

Calo Clor — Calogreen — Calomel . . .
 Nu-Vim — Swift's Special Golf — Am-
 monium Sulphate — Nitrate of Soda —
 Superphosphate. Maintenance implements
 of every description.

QUICKMAIL Coupon No. 17 will bring you complete information and prices on your needs—use it

J. OLIVER JOHNSON, INC.

940-960 W. Huron St., Chicago, Ill.

Phone Monroe 6580

25 Years of Reliable Service To The Golf Field

COMPLETE FUNGICIDE SERVICE

CALO-CLOR for the control of large and small brown patch. CALO GREEN* for small brown patch. Both of these are made in SUSPENSION grades, for liquid application. CORROSIVE SUBLIMATE for large brown patch and worms. AURAGREEN protects against brown patch and gives a lifelike color to off-color greens—developed by Green Section of U. S. G. A.

*Trade Mark Reg. U. S. Pat. Off.

WRITE US ABOUT YOUR TURF PROBLEMS

Mallinckrodt
 CHEMICAL WORKS

Second and Mallinckrodt Sts.
 St. Louis, Mo.

ST. LOUIS
 CHICAGO

PHILADELPHIA
 TORONTO

NEW YORK
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LEWIS WASHERS

MULTI-BALL ROTO

Wash golf balls as fast as you can feed them into this new washer! No gears — simplified splash-proof construction. Just turn the crank and out they pop — sparkling white, ready for better golf.
 Multi-Ball Roto
 each \$15.00



PADDLE-TYPE

The well-known inexpensive single ball washer that is seen throughout the world. The patented slot does the trick, insuring a clean ball.
 Paddle-Type
 1 to 10 each.....\$6.00
 11 to 20 each.....\$5.50



G. B. LEWIS CO. Dept. C 4, Watertown, Wis.

YOUR TURF PROBLEMS

... and their solution

QUESTION:

Our soil is heavy, and blue grass is uniform but thin. In summer players resent parched, hard fairways, so we propose to install a water system and re-seed. Is this the answer to our problem?

ANSWER:

No: The proposed program is not the sole answer. Sparse grass underlies member complaints, so increased grass density is the first necessity. Dense turf provides a softer surface cushion, and also curbs loss of soil moisture as a result of direct evaporation.

By keeping soil wet, water eliminates hard surfaces, but it will not improve character of turf despite contemplated re-seeding. In fact, ultimate deterioration is inevitable.

Because water revives scorched grass in the summer, many clubs *basitly* conclude that irrigation is the only necessity for good turf. For the first few years fairways are extolled, but a rude awakening occurs when clover, crab grass, and other weeds eventually predominate. Then the tendency is to lay all blame to irrigation and assume no responsibility for overlooking or ignoring the necessity for supplementary fertilization.

In any scheme of fairway improvement, irrigation ranks second to fertilization. By promoting continuous growth throughout the playing season, and by accentuating leaching, water actually increases rather than diminishes need for fertilizer.

Turf-forming grasses spread of their own accord, provided the soil contains moisture and an ample supply of plant food. New plants arising from underground stems, called rhizomes, account for increased density of blue grass. These rhizomes are produced in greatest abundance during the cool, moist spring and fall seasons. So aside from occasional

years with dry spring or fall seasons, grass density can be increased without irrigation.

Since blue grass coverage is uniform on your fairways, increased density can be obtained without resorting to re-seeding. Failure of grass to spread is the result of impoverished soil, rather than acute moisture shortage. That grass is a voracious feeder, especially with respect to nitrogen, is not fully appreciated.

For the past four to five years agitation for fairway improvement has been an annual event at your club. Each year enthusiasm ceased when the cost of fertilizer was submitted to the directors. The present proposal to spend ten to twenty times this amount for a water system can be justified only if the annual budget can include cost of necessary fertilizer, as well as the expense of watering and additional mowing.

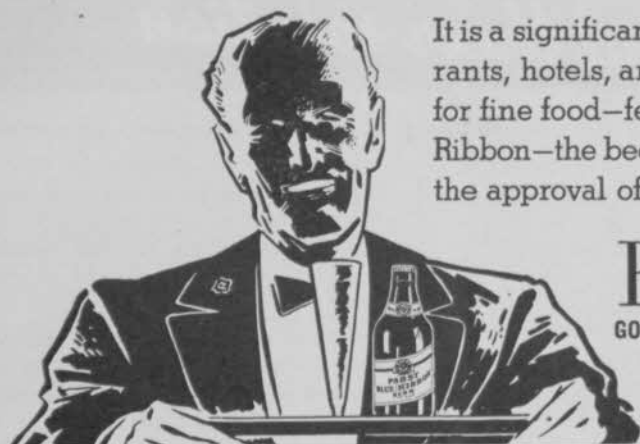
Admittedly, irrigation and fertilization will speed turf improvement, and will maintain green turf throughout the playing season. But, if the annual budget cannot cover the expense of both, then the sensible decision is to improve the turf first, and defer the water system until such time as the maintenance budget can carry both items.

Tell us about your Turf Problem. The facilities and services of our Soil Testing Laboratory and Field Agronomists are at your disposal, within reasonable limitations.

Turf Service Bureau

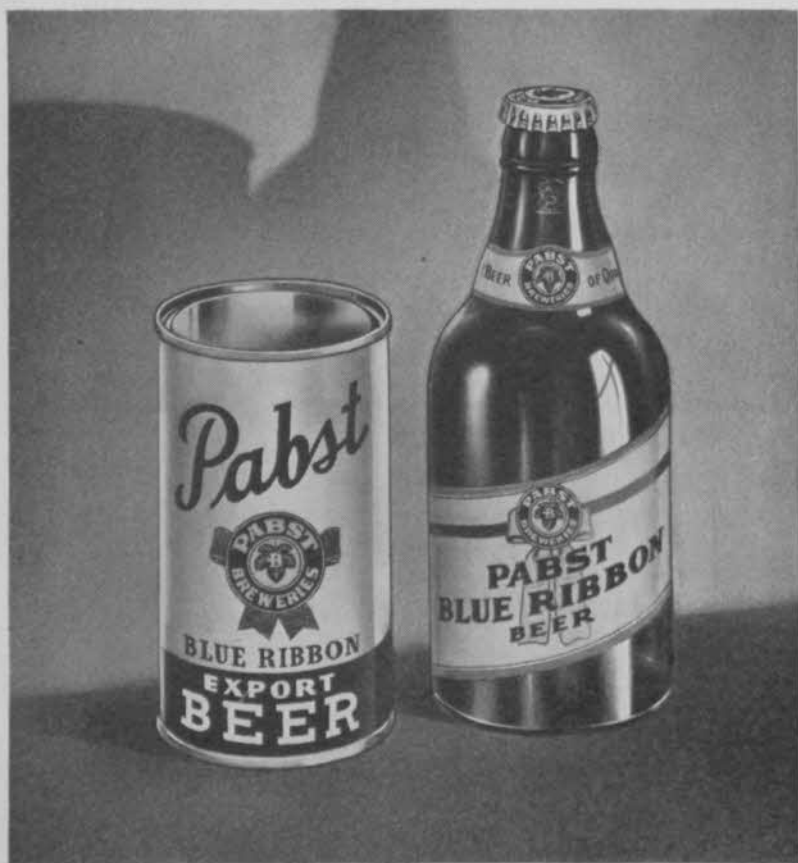
THE SEWERAGE COMMISSION
MILWAUKEE WISCONSIN

feed with **MILORGANITE**
THE ORGANIC-NITROGEN TURF FERTILIZER



It is a significant fact that restaurants, hotels, and clubs—famous for fine food—feature Pabst Blue Ribbon—the beer that has earned the approval of five generations.

PABST
GOOD TASTE FOR 94 YEARS



URGES NEW PAR COMPUTATION

IS the present method of computing par illogical and due for revision before golf is led into confusion and error by adherence to par as it now is determined? William B. Langford, veteran golfer and course architect, after 10 years of study and calculating, not only is convinced the present method of determining par is seriously wrong, but is of the firm opinion he has worked out a revision of par determination that provides a sound basis for appraising, comparatively, golf scoring.

Langford's findings, according to his interpretation, have two major applications:

(1) A true rating of comparative difficulty of holes for players of all classes, enabling the 'stroke hole's' to be properly placed on the card and more equitable handicapping to be done; and

(2) An accurate appraisal of the character of performance.

High Par Permits Low Scoring

In connection with the second claim for his progressive fractional-par system, Langford advances the interesting statement that much of the alarm about low scoring is without scientific foundation because the greater part of the sub-par scoring is done on courses that have their pars computed unreasonably high. This remark, coming from an architect, indicates that some of us may be worrying unduly about the long ball making courses play to easy.

In beginning his blast at the present

par set-up Langford points out that the existing par schedule of 250-445-600 yards for men's par change intervals has successive shots of 250, 195 and 155 yards as standard length attainment in consecutive strokes. This has been entirely out of line with performance for many years and when compared with the women's par schedule of 200-375-550 is illogical, for although the woman is rated as 20 yards shorter than a man on the second shot, she is supposed to be 20 yards longer with her third shot. A system that brackets together as par 4s, holes of 255 and 440 yards although obviously there is almost a stroke difference between such extremes, is not one that assures fair handicapping or an accurate rating of the standard of play, Langford declares.

Bases Par Distances on Average Shots

He proposes a par based on a 240 yard drive and an average 210 yard wood shot through the fairway. Inasmuch as par is considered the standard of first class golf, Langford says his determination of distances for drives and fairway wood shots is founded on average performance by first class men players. Women's par, according to his system, would call for a

drive of 205 yards and an average fairway wood shot of 175 yards.

By Langford's progressive fractional par system, a man's par 3 hole is any hole of 240 yards or less and a hole of 300 yards or longer is definitely in the par 4 class; the midway point, 270 yards, would be par 3.5. Langford has gone into mathematics to set the par 4.5 distance at 493 yards. He maintains that fractional par will provide a close measure of stroke probability, from which accurate inter-club handicaps can be derived.

Langford differentiates sharply between par and difficulty. Par, he says, is the probable average score of perfect expert play, and is based on length only. The difficulty in rating a hole is the uncertainty of making any given score on a hole. It depends on many factors, among which are length, surface warp, hazard placement and course condition, and can only be discovered by an analysis of competitive scores.

He has worked out a simple method of analyzing scores by which holes on any course may be rated and handicap strokes allotted in the fairest possible manner.

Langford began his research into par rating in 1924 in an effort to compute how wide a green should be for the approach shot required and his work toward a mathematical checkup of the artistic phase of golf architecture led him into the fractional par field. Checking over the scores of numerous National Open championships and National Amateur qualifying rounds, as well as data on club tournaments, developed the fractional par system.

System Checks with Tourney Averages

Langford's application of his fractional par computation to Oakland Hills, scene of the 1937 National Open, revealed that course as an eminently sound one. Scorecard par is 72, the average score of the first 25 and ties in the National Open was 72.80 and the Langford fractional par is 72.89. The hole on which the lowest percentages of pars was scored was the 491-yard eighth which used to be a par 4 hole but which was lengthened to give the bunkers significance for the second shots. There were 54 scorecard par 5s on the hole, 41 birdies, 4 eagles, 6 sixes and a 7 on the hole. By the Langford fractional par method the hole would be par 4.49. The Oakland Hills hole that was most frequently made in par was the 416-yard seventh, on which there were 86

pars out of 108 rounds played by the leaders. The average score was 3.89. Fractional par on this hole would be 4.15. This difference of .26 stroke under par is the widest gap between fractional par and the leaders' average score in the Oakland Hills case.

Langford does not advocate half strokes for putts. He presents the fractional par idea entirely as a sound mathematical basis for comparative difficulty ratings, not only between various holes on the same course, but between different courses.

However, he has worked out from data on games of expert and average players, and on a mathematical basis, a fractional par putting table that gives a reasonably good foundation on which to appraise putting performances. Obviously the expert who is content with the traditional 2-putts-per-green idea in par is not going to finish very high in competition. Accuracy of approaching, of course, has much to do with the putt total, and on that account Langford says that the fractional par determination of the full distance between tee and hole offsets the error of the antiquated two-putt factor in determining par.

Portland Dads Backing School Instruction Proposal

DADS' clubs of Portland, Ore., high schools are active in a move to put golf instruction into the local schools. The enterprise is receiving encouragement and support from Portland high school officials, sports editors and pros.

L. L. Rau of the US Rubber Co., and president of the Franklin High School Dads' club, is prime mover of the plan and hopes to see the Portland plan followed by Dads' clubs throughout the country. George Bertz, sports editor of the Portland "Journal," has been giving the Dads' club golf instruction plan a strong boost and forecasts that one-fifth, at least, of Portland's 22,000 high school students will enroll in golf classes if the golf teaching plan is favored with strong cooperation by local pros.

IN 1618 King James VI granted James Melville a monopoly on the golf ball trade, on grounds that "no small quantities of gold and silver is transported yierlie out of his Hienis' kingdom of Scotland for bying of golf ballis."



Seventeenth fairway on OSU's Scarlet course, taken from upper tee. The hole measures 220 yds. Lower tee, in foreground, is 180 yds. from green.

OHIO STATE'S NEW COURSE READY

By FRANCIS J. POWERS

WHEN the great recession occurred and citizens snatched the hen out of the pot and put it to work laying eggs, Ohio State university was an anomaly among institutions that went in for higher athletics on a major scale. One of the largest state universities in the country, Ohio State had no bonded indebtedness on its athletic properties.

The Buckeyes built the first modern football stadium in the Middle West, and the plant, that was dedicated in 1922, was free of all liens in 1926. Unlike so many universities, Ohio State did not immediately go in for a field house, intramural sports buildings and other knick-knacks, the plasters on which still are bowing the backs of many athletic directors and the tendons of football players.

That Ohio State never suffered from bank bruises is due to the business sagacity of Lynn W. St. John, for 26 years its director of athletics. "Saint" always has been a fellow who believed that athletic plants should be built in the order of satisfying the greatest good of the greatest number. As Ohio State football teams, annually among the country's greatest money earners, piled up a surplus, St. John built first a three pool natatorium, and second a golf course. That the Buckeye basketball team plays in the horse pavilion and the track team

performs of winters in a sheep barn on the state fair grounds, is satisfactory to St. John. Basketball, track and other indoor intercollegiate games will get modern accommodations after the needs of the majority of students are satisfied.

This is a ring around the buttercup manner of starting to tell that Ohio State will open for play 27 holes of one of the nation's finest golf courses, early in May. Here it also might be added that this third unit of Ohio's athletic properties was built, like the others, without cost to the tax payers. The football stadium was built on contributions and gridiron earnings; the natatorium was paid for entirely out of football receipts and the golf course financed from the same source plus a W.P.A. appropriation.

A university golf course long has been the dream of St. John. A tract of 297 acres of fertile pasture land, three miles north of the campus and between the water sheds of the Scioto and Olentangy rivers, was purchased in 1929, when a dol-

lar was something you paid for an old fashioned. Desiring only the best in architecture, St. John consulted with George Sargent, Bob Jones and other friends and finally decided upon the late Dr. Alistair MacKenzie, whose Cyprus Point, Augusta National and Bayside stand among the great courses of the land. MacKenzie drew plans for two courses but died before the actual construction work was started in the fall of 1925.

Inasmuch as MacKenzie regarded the plans for the Ohio State course as one of his masterpieces, St. John insisted that it be built according to the master's specifications. That this might be accomplished, John S. McCoy, Ohio State '19, an expert in golf course construction, who had frequently worked with MacKenzie, was hired and the course built without any change from the revered Scotchman's topographic map.

The inside or championship course is known as the Scarlet, and the outer, of which only 9 holes are constructed, is the Gray, those colors being the university's oriflamme. The Scarlet course measures 6,800 yards with a par of 72 and is testing enough for any championship event; although comfortable enough for the average player. The Gray course is considerably shorter and admirably suited for beginners.

Greens Grouped Where Possible

The course was built with the customary MacKenzie idea of economy in upkeep. Wherever possible the greens of the two courses are grouped and even W.P.A. workers will not find it fatiguing to drag their tools from one to another. The tees are large, averaging 5,500 sq. ft., to stand the wear and tear of student swings, while the greens average some 7,000 feet in area. The fairways are sowed to Cheving's fescue and the greens to Washington bent.

The irrigation system is the most modern high pressure center line system. Cast

iron mains, three to six inches in diameter, spaced 100 feet apart, run from tee to green through the center of each fairway. The water is supplied from a 9-acre lake that is fed from Turkey Run, while a 12-in. well capable of throwing 350 g. p. m. offers an auxiliary supply. The drainage system is one of the most complete in the country, with a network of tile lines 25 to 35 feet apart covering the entire course, including the rough.

The first and tenth tees and ninth and eighteenth greens of both courses are adjacent to the clubhouse, which is more elaborate than found on the customary college course. The clubhouse will contain a large locker-room for students and two for faculty members, and also has a comfortable lounge.

Course Allows Other Activities

The course also will serve as a community playground for the university. The 9-acre lake has been stocked with bluegills for those who cast rather than strike their hooks, and picnic spots equipped with tables and ovens, are located in the several wooded sections. A faculty group has installed facilities for trap-shooting and in another corner the archers will play Robin Hood. A cross-country course has been mapped and in the winter Arctic-minded students will find the lake available for skating.

Since golf is a part of the university's intramural and physical education program, the course will be restricted to students, faculty members and their families, and campus employees. Alumni may play upon payment of a greens fee but not more than five times per year. Cost of play for students and other eligibles will be very nominal on either a yearly or daily basis.

A yearly membership for students will cost \$20, and \$30 for faculty members and employees. For a faculty man and wife it will be \$50 with an additional \$20 for faculty children over seventeen and \$15 for those under that age. Daily fees for students will be fifty cents except on weekends and holidays, when it will be seventy-five cents, while for the others it will be seventy cents and one dollar. Student locker privileges cost \$5 per year, and \$6 and \$8 for faculty members and employees.

This schedule of membership costs is quite in keeping with those of other universities investigated by the Ohio State



One of several shelter houses built for convenience of O.S.U. golfers.