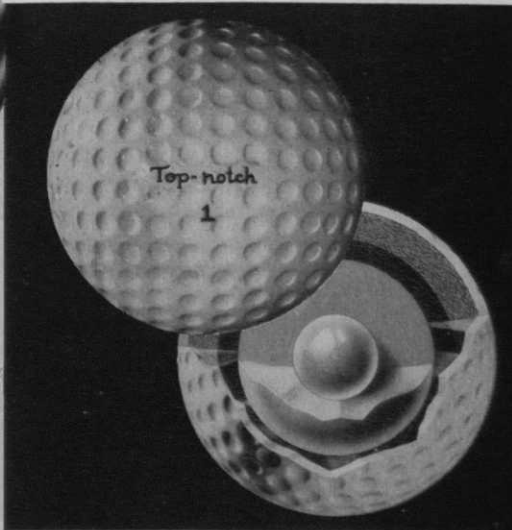


THE A DIVE BOMBER—



New Metal Face Insert

WHAT MAKES THE WILSON "TOP-NOTCH" GO? THE *Hydroilic* CENTER



HYDROILIC ACTION

The principle involved in the brilliant action of this new ball is based upon enclosed oil *under pressure*—like the Hydraulic Principle. When the impact of the club face compresses the ball it also compresses the oil confined in the center. The efforts of the core and the oil to *resist compression* affect both the recoil of the ball and its forward motion. A few shots will demonstrate the *results*.

WILSON SPORTING GOODS CO.
Chicago, New York and Other Leading Cities

Athletic equipment is not a luxury but a necessity in the physical and character development of the youth of America and in the building of good citizenry. Wilson Standards are accepted and Wilson Equipment is used by the Armed Forces of the Nation.

tal Lawns and which attracts players from other fee and private courses in the vicinity one has to be able to break 80.

The competitions which give prize chances to all classes of players have Joliet one of the golf-talkiest and playingest small cities in the country.

Heinie is always on the lookout for exhibitions. Harry Adams has given him a hand in lining up talent for exhibition matches and demonstrations. Harry, Jerry Glynn, Johnny Bulla and other boys have appeared at Crystal Lawns and helped to keep golf interest blazing.

When you mention Johnny of medicine ball fame, some pros would begin to storm. The prospect of Johnny appearing at their courses and reminding the players that golf balls are sold at drug stores is an alarming one to these fellows, but not to Heinie. He says he sells golf balls where golf is played and by making it plain that he has good balls at 25 cents, 3 for \$1, 50 cents and 75 cents, he'll get all the business his smart, vigilant and energetic merchandising merits. He points out as his opinion that many fee and public course pros make a mistake by putting the big play on 75 cent balls when 50 cents per ball is about tops for most of the traffic at such courses. And 3 for \$1 balls are best sellers. How long that will continue with ball prices due for a raise, there's no telling.

This phase can be argued plenty, but Heinie maintains that he gets a much higher percentage of the business that passes his pro-shop than Walgreen's drug stores get of the business that passes their windows.

"When I miss out on a sale it is my fault, not the customer's," Heinie Sick reasons.

He is a great one to shop around the

factories for discontinued lines of clubs and balls and bags. And how he ballyhoos those bargains to the Crystal Lawns players.

Heinie probably does by far the largest business in used clubs of any pro in the Chicago district. He says he never makes a cent on these used club sales and often handles the same used set as many as three times a season. By getting his patrons accustomed to good quality clubs he trades them up and claims more high grade clubs used by players at Crystal Lawns than at any fee course in the country.

Another reason he has a policy of not making a dime on these sales of used clubs is because he figures that getting a good set of clubs in a man or woman's hands is a sure way of making them play more golf. More golfers and more golf is what he's after.

Whether the sale is 10 cents worth of tees or a \$140 set of clubs Heinie gives the customer big-time service. He says that one of the strongest points a fee course pro can have in his selling plan is shop appearance and sales service that will stack right up with the best that's provided at the best of private clubs.

Heinie was brought up right in golf. He started as a caddie at Omaha (Neb.) Field Club when Johnny Goodman was one of the caddie corps. Sick showed possibilities to Stanley Davies, widely known pro at the Omaha club, and Stanley took him into the shop. Anybody who's trained by Stanley and satisfies this able and exacting master pro, learns the business thoroughly and correctly. Heinie later was assistant to Bob Christie and learned plenty from Bob, too.

Sick himself follows the Davies principle in selecting, training and supervising good assistants. The assistant he's had for



One of Heinie Sick's champion pupils is his wife, Mrs. "Bernie" Sick, shown here practicing under her husband's watchful eye. Mrs. Sick holds the women's Cook County Open title.



"PLAY THE CLUBS THE PROS PLAY"

Tommy Armour TOURNEYS



HARRY OGDEN
Fairview G. C.
Keokuk, Iowa



CHUCK BUBANY
Macon G. C.
Macon, Mo.



LOREN BEATTY
Westlink G. C.
Wichita, Kans.



FRANK BUBANY
Kirksville C. C.
Kirksville, Mo.

WARREN RYAN
Katy-Parsons G. C.
Parsons, Kans.



HARLAN EARL GILMAN
Western View G. C.
Augusta, Me.



JACK KELLER
Ft. Kona G. C.
Ft. Dodge, Iowa



PAT PATTON
East Hills C. C.
St. Joseph, Mo.



BLANTON BENTLEY
Hillcrest C. C.
Coffeyville, Kans.



JIMMY THOM
Clear Lake G. C.
Clear Lake, Iowa



ARCH McMILLAN
Lakewood G. C.
North Kansas City, Mo.



VERLE L. WILLIAMS
Williams D. R.
Rochester, Minn.

Tourneys are the clubs the pros built — incorporating their own suggested playing features — from specifications on their "personal use" clubs. Tourneys are the clubs the pros play. In the '41 National Open, more Tourney clubs were used than any other individual brand—25% more Tourney irons than their nearest competitor.



MacGregor
THE GREATEST NAME IN GOLF

CRAWFORD, MACGREGOR, CANBY CO., DAYTON, OHIO

Players pictured are not members of the MacGregor Pro Advisory and Technical Staff, but play these clubs through personal choice.



One of the golf instruction classes at Riverside Military Academy, Gainesville, Ga., is shown in photo above. Les Heon, pro at Montpelier (Vt.) CC, is pro instructor at the Academy, and during the past year gave both group and personalized instruction to more than 100 boys at RMA. Parents of these pupils appreciate the work Heon has been doing there, as their many letters of interest and encouragement during the past three years testify. The practice 'net' shown above was devised by Heon, and serves satisfactorily in providing practice facilities in a limited area.

several years drew No. 158 in the first draft so no pro golf assistant did any better than a tie with Heinie's boy "Weenie" in getting into the draft army.

Heinie says the best golf boosters at his course are the doctors. About 30 of them play every Wednesday at Crystal Lawns. They prescribe the game to many of their patients.

This fellow's shop at Crystal Lawns shows what ingenuity can do with small space. It's an open front shop, only 14 ft. square but looks larger. It contains a counter and show cases and always a good display of clubs of wide price range. The shop has light blue walls, and dark blue steel furniture. The porch in front of it is an attractive lounging place. It's only 15 ft. from the first tee.

Heinie's wife holds the women's Cook County Open title. He taught her. She's cashier at the club and a sound business team-mate for Heinie. She doesn't compete in women's events at the club. Smart girl, that.

Mrs. Sick's record as a golf pupil of her husband has been instrumental in building up large classes and individual lessons for Heinie at the Joliet YWCA.

From high school freshman age to the 90-year post, golfers around Joliet know Heinie Sick and think well of him. His pro colleagues at neighboring clubs, a group of sound and active fellows, think highly of him too. And in this pro business when the other pros in your neighborhood give a cheer for you, you really are good.

Chicago Officials Hold Annual Club Relations Day

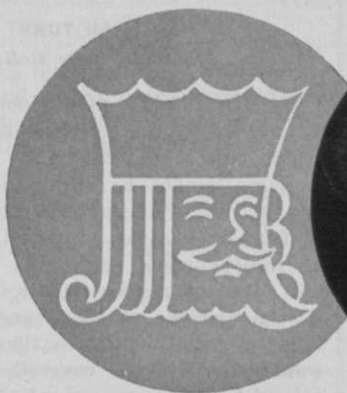
ANNUAL Club Relations Day of the Chicago District Golf Assn., when club presidents, governors and committeemen get together to discuss management problems and play an afternoon of golf, was held at Olympia Fields CC, June 20. Counting the women on committees of the Women's Western and Chicago Women's DGA, who this year were invited for the first time, attendance was in excess of 300.

Activities began at a breakfast presided over by CDGA Pres. Maynard D. Fessenden. Speakers were Pres. Paul Smith of Olympia Fields, who welcomed the visiting officials, John Monteith, Jr., of the Green Section, who spoke on ways of improving courses at no extra cost, and Mrs. Chas. B. Willard, president of the Women's Western GA, who discussed junior golf activities.

Golf occupied the attention of the crowd during the afternoon, followed in the evening by a program of speeches and discussions on "What Is Golf News?", "Making Use of All Our Committees", "New Ideas for Women Chairmen", "Handling the Caddie Situation", and "Handling Golf by Promoting Competitive Tournaments".

Including the women golfers in Club Relations Day proved a great success and will be followed in coming seasons.

THE KING PAYS OFF!



"I'm proud to announce that SILVER KING'S Pro-ONLY policy is making *real profits* for Pro shops clear across the country.

"I have personally received hundreds of enthusiastic comments from my fellow-Pros. And with SILVER KING'S sales climbing every day, I'm sure that Pros everywhere will get their share of the KING'S success.

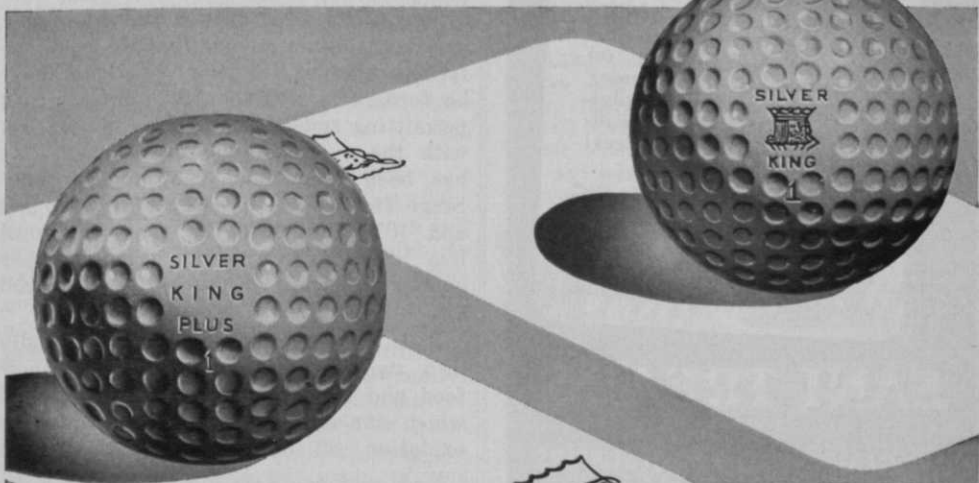
"The response to SILVER KING'S national advertising has certainly proved that its reputation is *better than ever!* The ads say: 'Your Pro deserves *all* your patronage'...and club members from

coast to coast are asking for "The SILVER KING that fits their swing'."

SILVER KING PLUS, the championship "power ball" for the tournament player... SILVER KING, tough cover—America's favorite. Each famed for distance, durability, direction. Each with Cadwell-Geer Cover. 75¢. And SILVER DUKE, the Big Economy ball at 50¢.

Jack Jolly.

Sole distributor, 872 Broadway, Newark, N. J.





SANI-TREADS

have a
16-year reputation
for
quality

The tough, yet soft, pliable, water-resisting texture of Sani-Treads puts them in a class by themselves. Worn about the locker or shower room, they add much to members' comfort — and give protection from Athlete's Foot and kindred infectious diseases.

**ONLY SANI-TREADS
SATISFY!**

Make your members happy! Get a supply of genuine Sani-Treads for your club — they're patented! Highest in quality — they're low in price. Fit like a glove! Save on towels, too! Order today — or write for free samples. Sani-Treads are still available at rock-bottom prices!

SANI-TREAD COMPANY, INC.

567 Washington St., Buffalo, N. Y.
578 King St., W., Toronto, Canada

CHARLES F. HUBBS & COMPANY
383 Lafayette St., New York City
Distributors in Metropolitan District

SANI-TREADS

REG. U.S. PAT. OFFICE

THE ORIGINAL CLUB BATH SLIPPERS

Soil Germs—

Their Role In Composts and Special Fertilizers

By L. M. TURK*

Michigan State College

PRODUCTIVITY of our soils is directly affected by the activities of the innumerable soil organisms. Many of these organisms cannot be seen with the naked eye, yet they take part in a great variety of fundamental activities. They perform an indispensable service in keeping certain plant nutrient elements in circulation. In the absence of these germs, the surface of soils under natural conditions would soon become covered with a great mass of undecomposed plant and animal residues; life would soon cease because the essential elements would quickly become exhausted.

The original concept of the soil population as being predominately bacterial has been modified in recent years to include also numerous groups of fungi, actinomycetes, protozoa, algae, and many small animals. A general knowledge of the nature of soil organisms is of considerable interest and of extreme importance because it is to these tiny living things we owe the continued development of higher plants.

Bacteria are usually regarded as the simplest and smallest forms of life known. The numbers of bacteria present in soils are extremely variable since so many conditions affect their growth and since they can multiply in numbers with such extreme rapidity. A new individual may be formed in less than 20 minutes, thus permitting sudden fluctuations in numbers with the ever-changing environment. It has been found that the numbers may range from 1 to 4 billion per gram of soil and it is not unlikely that the total live weight of bacterial substance, per acre-seven-inches of soil, exceeds 1,000 lbs. in good soils.

Soil bacteria may be divided broadly into two large groups based on their food and energy requirements: (1) those which can obtain their energy from the oxidation of inorganic elements, their

*GSA Convention Address.

carbon from carbon dioxide, and their nitrogen and other minerals from inorganic compounds; (2) those which obtain their energy and carbon from organic substances.

Those bacteria which obtain their energy and carbon from organic substances may be subdivided into two groups: (1) the nitrogen fixing bacteria (those that gather atmospheric nitrogen), and (2) those that require fixed nitrogen. There are two groups of nitrogen fixing bacteria; the members of one group grow and function in the association with legume plants, and members of the other group are able to gather and fix nitrogen in soils in the absence of higher plants.

Fungi are all devoid of chlorophyl and obtain their food and energy from the soil organic matter or from other forms of life with which they may be associated. They respond especially well to aeration and can make extensive growth only under aerobic conditions. They make a vigorous growth in either acid, neutral or alkaline soils; many fungi are favored by the more acid soil conditions.

The number of fungi ordinarily found per gram of soil is usually between 8,000 and over 1,000,000. This would probably be the equivalent of from 1,000 to 1,500 lbs. per acre (7 inches deep) of living substance. It is observed, therefore, that fungi may be out-numbered by bacteria but the fungi present a much greater mass of growth per unit volume of soil, due, of course, to their much greater size.

Actinomyces may be looked upon as occupying a position, from the morphological point of view, between that of the bacteria and fungi. They resemble bacteria in that they are unicellular and are about the same size in cross section. They resemble the filamentous fungi in that they produce a very extensive, unicellular and profusely branched filamentous network.

Sensitive to Acidity Changes

For the most part, actinomyces are aerobic and in comparison to most soil organisms they are more sensitive to changes in soil acidity. They function best in soils at about the neutral point as far as soil acidity is concerned. They perform a very important function in soils by breaking down organic matter and setting free the nutrients it contains.

These organisms are present in great abundance in soil; the numbers may run as high as 36 million per gram of soil.

NOVEL BALL SALES STUNT HANGS-UP PRO SALES RECORDS COUNTRYWIDE

NORTH BRITISH has been working closely with pros throughout the country, promoting a unique club trophy stunt that really moves balls. N-B donates the silver cup free of charge and even has it suitably engraved with club and pro names. All the pro must do is stage the event and make the most of it. Suggest you get in on this offer and win the thanks of your members for giving them a great event. Write North British, 22 Park Place, New York, for details.



Despite 'hell and high water'

North British produces this fine new ball ... and gets it across!

NORTH BRITISH, greatest of the old Scottish ball-makers is **delivering** the best ball they've ever built. Brand new from core to cover, **stepped-up** in tension, click and **distance**—you'll spot its greatness instantly.

Your members will want to see and play the only and leading 75c ball coming out of Britain today.

North British

Headquarters for
imported and domestic golf items

22 PARK PLACE • NEW YORK
Lytton Bldg. • Chicago
1855 Industrial St. • Los Angeles
60 South St. • Boston
4554 University Way • Seattle

THINKING OF MOVING?

If you're in the golf business, and are not satisfied with your present location, why not investigate what 'Golf Headquarters' has to offer—which means, of course, the

LYTTON BUILDING

Golf manufacturers, wholesalers, publishers, and others who serve the golf trade find that it pays in dollars and cents, to locate their offices and display rooms in the LYTTON BUILDING . . . a modern 18-story structure located at State Street and Jackson Boulevard, in the heart of Chicago's loop.

A list of LYTTON BUILDING tenants looks like "Who's Who in Golf" because here you will find names famous wherever golf is played . . . P. G. A. . . . NATIONAL GOLF FOUNDATION . . . WILSON . . . BURKE . . . KROYDON . . . YOUNG . . . ATLANTIC PRODUCTS . . . JACKMAN SPORTSWEAR . . . and many others who are "cashing in" on the extra drawing power and the extra business volume resulting from this strategic location

The LYTTON BUILDING is one of the finest office buildings in Chicago's retail shopping district. Standards of occupancy and building maintenance are of the highest. A limited amount of desirable space is available on the upper floors . . . with unobstructed light and air . . . at a rental that is exceptionally attractive.

The LYTTON BUILDING

Golf's Most Famous Address

14 EAST JACKSON BOULEVARD

CHICAGO, ILLINOIS

In actual weight of live substance per acre they excel bacteria but as a rule will not equal that of fungi tissue.

The chlorophyl-bearing microscopic plants are called algae. They are universally distributed in the surface layers of soil wherever moisture and light are available. Algae obtain nitrogen and minerals from the soil while carbon is derived from CO₂ of the atmosphere. They utilize the energy of the sun so long as they have free access to light. Below the soil surface, in the absence of light, they act in a manner similar to fungi in that they live at the expense of the soil organic matter. Algae may thus live and function much like higher plants or they may perform like the lower forms of plant life.

Algae are most abundant in the upper soil horizons where environmental conditions are most favorable for their development. The number may run as high as 10,000 or more per gram of soil with a total live weight of perhaps 800 lbs. per acre-7-inches of soil.

The development of algae in the soil results in increasing the supply of organic matter and in transforming, temporarily, soluble forms of nitrogen and mineral elements into organic or insoluble forms. Furthermore, they may aid in the decom-

position of organic material and they exert a solvent action on rocks and minerals.

The protozoa are generally accepted as being the simplest form of life belonging to the animal group. They are all microscopic in size and unicellular but larger than bacteria and more complex in their activities. Soils may contain up to 1,000,000 or more of these organisms per gram of soil with a total live weight of two or three hundred pounds per acre.

Protozoa depend on the organic matter as a source of food; certain groups may feed on bacteria. Granting that they may feed on bacteria then their effect will be either beneficial or harmful depending upon whether they consume beneficial or pathogenic bacteria.

Nematodes are sometimes called eel worms; they are round or spindle-shaped and usually with a pointed posterior end. Most of them are microscopic in size, seldom large enough to be readily seen with the naked eye. Billions of them are found in each acre of soil. Some of them feed on decaying organic matter, some feed on earthworms, bacteria, protozoa, etc., and others infest the roots of higher plants, passing a part of their life cycle imbedded therein, causing a great deal

of damage to certain crops, especially the vegetable crops.

The activities of all nematodes are not harmful to the growth of higher plants. They aid in bringing about an intimate mixture of the mineral and organic matter and in breaking down organic matter. They may improve soil aeration in heavy soils.

Perhaps the most important group of the larger animals inhabiting the soil is the common earthworm. They prefer a moist environment with an abundance of organic matter and a plentiful supply of available calcium. They are found only sparingly in acid sandy soils low in organic matter. Obviously, figures indicating numbers are merely suggestive. The numbers per acre-plowed-layer may range from a few hundred or even less to more than a million. It has been estimated that between 200 and 1,000 lbs. of earthworms are present in an acre of soil.

It is believed that in some soils these organisms may pass several tons of soil through their bodies annually and in so doing bring about an increased availability of plant nutrients. Considerable soil mixing is accomplished as a result of their action. Holes left in the soil aid in increasing soil aeration and drainage. Frequently earthworms bring considerable quantities of soil from the lower soil layers to the surface which is very objectionable in the soil of golf greens. This frequently occurs where such soils have received heavy applications of organic fertilizers.

Other groups of the larger animals inhabit the soil, namely: rodents, ants, snails, spiders, mites, millipedes and centipedes. Some of these organisms may spend all and others only a part of their life cycle in the soil. Although soils may be directly benefited by their activities, it is obvious that they may prove unfavorable under certain conditions.

Soil organisms, in general, have the same nutritional requirements as higher forms of life. For their growth and synthesis they all require supplies of energy in addition to the several essential elements including carbon, hydrogen, oxygen, nitrogen, phosphorus, potassium, sulphur, calcium and others. With the exception of algae all the important soil microbes are devoid of chlorophyll and must obtain their energy either from the oxidation of simple inorganic substances or from complex organic substances as is

TIMELY TURF TIPS

WHITE GRUB CONTROL

White grubs, or the larvae of the May or June beetle, are a menace to fine turf. Grubs of the green June beetle do damage too, but are more difficult to control because they work deeper in the soil. In eastern regions, grubs of the Oriental, Garden, Asiatic, and Japanese beetle do similar damage. All can be controlled by applying acid lead arsenate, commonly called lead arsenate.

When any of these beetles occur in sufficient numbers, resulting grubs will damage grass, unless enough lead arsenate is applied to kill the young grubs. On new seedings lead arsenate should be applied and worked into soil before seeding. This treatment may retard, but will not prevent germination. Apply at 5 to 10 pounds per 1,000 square feet, which is 200 to 400 pounds per acre.

Since lead arsenate is an exceedingly fluffy, fine powder, a carrier is needed to insure even distribution. Besides being the best carrier for applying lead arsenate, Milorganite is the ideal source of nitrogen for new seedings. Use 30 to 50 pounds per 1,000 square feet. (1,200 to 2,000 pounds per acre). Simply mix the lead arsenate with it and scatter evenly over the area. Then apply 20% grade superphosphate at 10 pounds per 1,000 square feet (400 pounds per acre); scratch all three into surface and sow seed. The Milorganite and phosphate insure quick development of uniform turf.

Milorganite is the ideal carrier for applying lead arsenate to established turf, also. From 3 to 5 pounds Milorganite are needed for each pound lead arsenate used. Where infestation is light, 5 pounds lead arsenate per 1,000 square feet (200 pounds per acre) is enough; but from 10 to 15 pounds (400 to 600 pounds per acre) is needed for heavy infestation.

While lead arsenate may be applied at any time when there is no frost in the ground, early August treatments seem most effective for killing newly hatched grubs, particularly in the Japanese beetle belt. It gets the small grubs before they appreciably injure the turf.

Tell us about your Turf Problems. Write:

Turf Service Bureau

THE SEWERAGE COMMISSION
Dept. B-7. **Milwaukee, Wisconsin**

MILORGANITE for BETTER TURF

Your Club Needs MELFLEX PROTECTION for 2 reasons

1. MELFLEX texturized rubber runners and mats prevent slip accidents on steps, in locker and showers. . . . They assure a firm footing wet or dry. . . . And that is vitally important to your members.

2. They protect all floor surfaces because they are tough, resilient and resistant to the cutting action of cleats. . . . This means economy for the club as well as the maintenance of its good appearance.

There are types of MELFLEX Mats and runners for every club need. . . . By dropping us a card or letter we will send you complete information and catalog.

MELFLEX PRODUCTS COMPANY

L. E. Warford, Pres.

415 Wheeler Lane • Akron, Ohio

Golf is a GRIN BUSINESS



THAT GRIN YOU SEE when a customer hits an LL-Penfold-75 means you've made a friend for life. He'll be back to you for more of these famous long distance balls because Penfold Golf Balls are sold exclusively through professionals. Play a Penfold yourself. Stack it up against any other golf ball made and you'll grin too. And there's a Penfold Golf Ball in every price range, from the Penfold-35 at three for a dollar to the deluxe Penfold Autograph, golf's luxury ball.



PENFOLD

World's Premier Golf Balls

LL-Penfold-75 . . .75¢ Penfold-5050¢
LT-Penfold-75 . . .75¢ Penfold-35 . . .3 for \$1
Penfold Autograph . . .\$.1

SOLD EXCLUSIVELY THROUGH PROFESSIONALS

the case with most bacteria, all the fungi, and protozoa.

Certain groups of bacteria have the ability to utilize the free nitrogen of the air and build it into their protoplasm, thereby increasing the soil's supply of combined nitrogen. Other soil organisms must get their nitrogen from complex organic substances or from simple inorganic compounds. They obtain their other necessary mineral elements from the soil minerals.

The environmental conditions, including the physical and chemical composition of the soil, determine the nature of the microbial population at any given time in the soil. In general, the fertile heavy soils rich in organic matter contain many more microbes than light soils poor in organic matter.

The optimum temperatures for most soil microbes are considerably higher, as a rule, than those which prevail in the soil, even in summer. Consequently it may be assumed that micro-organisms never reach their highest level of activity in soil and they thus utilize only a part of the potential energy sources. For the majority of the soil organisms the optimum temperature is about 35° C. Within a rather narrow range the rate of biological

Extra Profits for PROS:

"Doctor E-Z Golf"

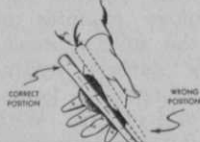
Your players will appreciate DR. E-Z GOLF. Here are some of the many advantages: COOL COMFORT — BETTER CLUB CONTROL — LESS PERSPIRATION — NO SORE HANDS. It is tailored from especially prepared, light weight leather.



Sells
for **50¢**

. . . . a nominal price to any golfer and a BIG PROFIT FOR YOU. Packaged with complete instructions in cellophane envelope, mounted one dozen to an attractive counter display card. This attractive display card actually sells them for you.

Write for details on this attractive, big profit offer. Please give club connection, as DR. E-Z is sold only at golf courses.



"Doctor E-Z Golf"

JEFFERSON CITY, MISSOURI