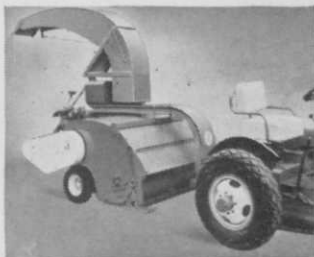


Jacobsen



New 3-in-1 Turf Groomer

Removes thatch—picks up leaves and turf debris

Now, Jacobsen introduces the fastest, easiest, lowest-cost way to remove leaves, thatch and turf debris... automatic grooming with the new Jacobsen Turf Groomer!

Depending upon turf conditions, speeds up to 8 mph can be obtained. The Turf Groomer scarifies, sweeps up and removes all types of leaves and debris in one easy operation. For quick disposal, its 5-foot auger-blower system with guided, swivel discharge chute forward-loads a towing vehicle, loads trucks running along at either side, or back-loads trucks or the dump, Turf Trailer accessory shown above.

The Turf Groomer removes thatch more easily and economically, too. It employs a series of free-swinging,

flail knives that slice through roots, runners and dead grass, and aerate the turf. They are located between its nylon brush vanes which immediately pick up and load the thatch and clippings into any type carrier.

The new 3-in-1 Jacobsen Turf Groomer now makes large area turf maintenance a simple, efficient, remote-control one-man operation for golf courses, parks, cemeteries, sod farms, and the grounds of schools, institutions, plants and military establishments. For full details, phone your Jacobsen Turf Equipment Distributor for a demonstration, or write today. Jacobsen Manufacturing Co., Dept. G-2 Racine, Wisconsin.



GRAU'S ANSWERS TO TURF QUESTIONS

BY FRED V. GRAU



Our Strongest Tools Are Soil Tests

In everything we do there is a compelling need to achieve an equitable distribution, a balance, among the various phases of our day-to-day life. We need to balance work and play, vocation and vacation, joy and sorrow for the complete life. Some sports have not had a vacation in years; others take them regularly. "All work and no play makes Jack . . ." but who wants a narrow, one-sided employee even if he's rich.

Balance is essential in producing high-quality turf. The soil must have a balance between air and water; the air balanced as to oxygen and carbon dioxide. Soil acids and alkalis must be balanced to avoid excesses of either. Traffic must be controlled in relation to soil compaction to avoid excesses and the death of grass.

Protective Mechanism

Soil microorganisms apparently automatically achieve balance with external factors when provided ample supplies of food and energy and chemical necessities which are identical to those required by grasses. Well-nourished organisms continue increasingly to produce colloids (glue-like) which bind tiny grains of sand, silt and clay together into large grape-like bunches called aggregates which then act like large coarse soil particles. Soils then can breathe, resist compaction, absorb traffic shocks, absorb water and stay alive.

Balanced nutrition, which feeds soil organisms first and grass second, consists of supplying all nutritive factors in proper proportions. When soil tests show excessive soil acidity we must apply calcium and magnesium to counteract the hydrogen ions, thus restoring balance. Nitrogen, of course, must be kept in constant ample supply so that soil organisms never, never go hungry.

Phosphorus, essential for root growth, is needed in moderate supply. When great

excesses, detected by soil tests, accumulate, it can be eliminated from the diet until levels become moderate. Potash, essential for many things, needs to be present in adequate amounts. Excesses may be harmful, always are wasteful. Soil tests can be so useful. Iron, copper, boron, zinc, manganese and other trace elements may be needed occasionally to maintain growth and color.

The complex dynamic biological system of soil-plant relationships has the inherent ability to absorb many shocks and to achieve balance if provided with reasonably adequate mineral nutrition and water when needed. Chances for satisfactory growth improve as we provide nutrient elements balanced according to the supply in the soil and to the needs of the plant. Our strongest tools are soil tests, intelligently interpreted and meticulously heeded.

Turf Feeding Plan

Q. For years before I took over our course the main fertilizer used was a 1-1-1 inorganic mixture. At times, my predecessor used animal residues and occasionally a little muriate of potash. Recent soil tests show 1500+ pounds P_2O_5 to the acre on greens and tees, about 1,000 lbs./A on fairways. Potash varies from L to M. What do you suggest for a feeding plan? (North Carolina)

A. This is becoming a rather common thing over a large part of the U.S. and Canada. To some extent the high readings for P may be attributed to arsenic but hardly to the extremely high levels that show up in the tests. Many courses that are plagued by VH readings for P (and often plagued with poa annua, too) now are developing programs of feeding straight nitrogen materials (no phosphorus) and sulfate

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How long will this plastic pipe last? Only Carlon could tell for sure.

Yes, Carlon takes the lead by developing a new method of determining the expected performance of plastic pipe in golf course irrigation systems. The Carlon Cycle Rating Method developed exclusively in our laboratory, can tell you the expected performance of plastic pipe based on your own operating conditions.

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Please send me complete information on the Carlon Cycle Rating Method.

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Potassium or Potash

Symbol: K from German *Kalium*. Potassium is a major nutrient element essential for plant growth. The pure element potassium is a grey metal that reacts violently with water, spitting flame and smoke. Plants indulge in "luxury consumption" when more K is present than is needed. It can be lost by leaching.

K is supplied by potassium sulfate, potassium chloride (muriate of potash) and by sul-po-mag (sulfate of potash-magnesia). K-sulfate carries 50 per cent K_2O equivalent, compared to about 60 per cent K_2O in muriate of potash and 21 per cent in sul-po-mag. K-sulfate yields sulfur to plants, a nutrient.

In balance with N, P and other nutrients, potassium performs several essential functions, some not yet well understood. It is not known to enter into chemical combination and become a part of the plant. It helps plants resist drought and diseases. It builds cellulose and makes plants stiffer. Root growth is improved. Many enzyme actions are enhanced. Respiration is reduced. Photosynthesis and food formation are improved. It helps to keep conducting tissues clear for translocation of sugars and starch. Plants stay more plump with reduced wilting and lower water loss. Potassium helps roots to absorb nitrates.

Soil tests accurately indicate levels of available K. Low to medium levels are sufficient for most turf. Two to four split applications a season are considered better than one heavy treatment for maintaining moderate levels.

Potassium materials are inorganic and will burn foliage. Thorough watering usually eliminates possible damage. Hydraulic application of finely-powdered forms is becoming popular. Re-cycling of nutrients where clippings are returned reduces the need for applied K.

Most potash comes from Carlsbad, N.M., Searles Lake, Calif., and Wendover, Utah. There are large reserves in Canada, also in Germany, France, the Soviet Union and Spain.

Potassium deserves to be used intelligently, as needed, according to soil tests.

of potash. Some courses have been on this type of program for over five years and report excellent results. No sign of P-deficiency has occurred to date.

Hydraulic feeding (sprayer, proportioner or siphon) makes it easy to add soluble sulfate of potash to the tank holding the straight nitrogen so that no extra labor is involved. Dry applications on fairways can be made by having a custom mix prepared that is geared to the soil needs (which may be a 3-0-1, a 4-0-1, or even a 5-0-1). The other way, of course, is to make separate applications of the individual materials.

Sulfate of potash is preferred over muriate for the reason that the sulfur is a nutrient element (Chlorine is not) and often is deficient in turf soils.

Frequency of feeding N-O-K will vary with the type of N material selected. The important thing is to reduce or avoid P use until soil tests show more realistic levels for available P.

Zebra Grass

Q. We want information regarding Zebra grass. Would you tell us if you are familiar with this product. It is our understanding that

this grass will grow almost anywhere, that it spreads rapidly, is very hardy and never needs to be cut. We would appreciate any information you might be able to give us. (Colorado)

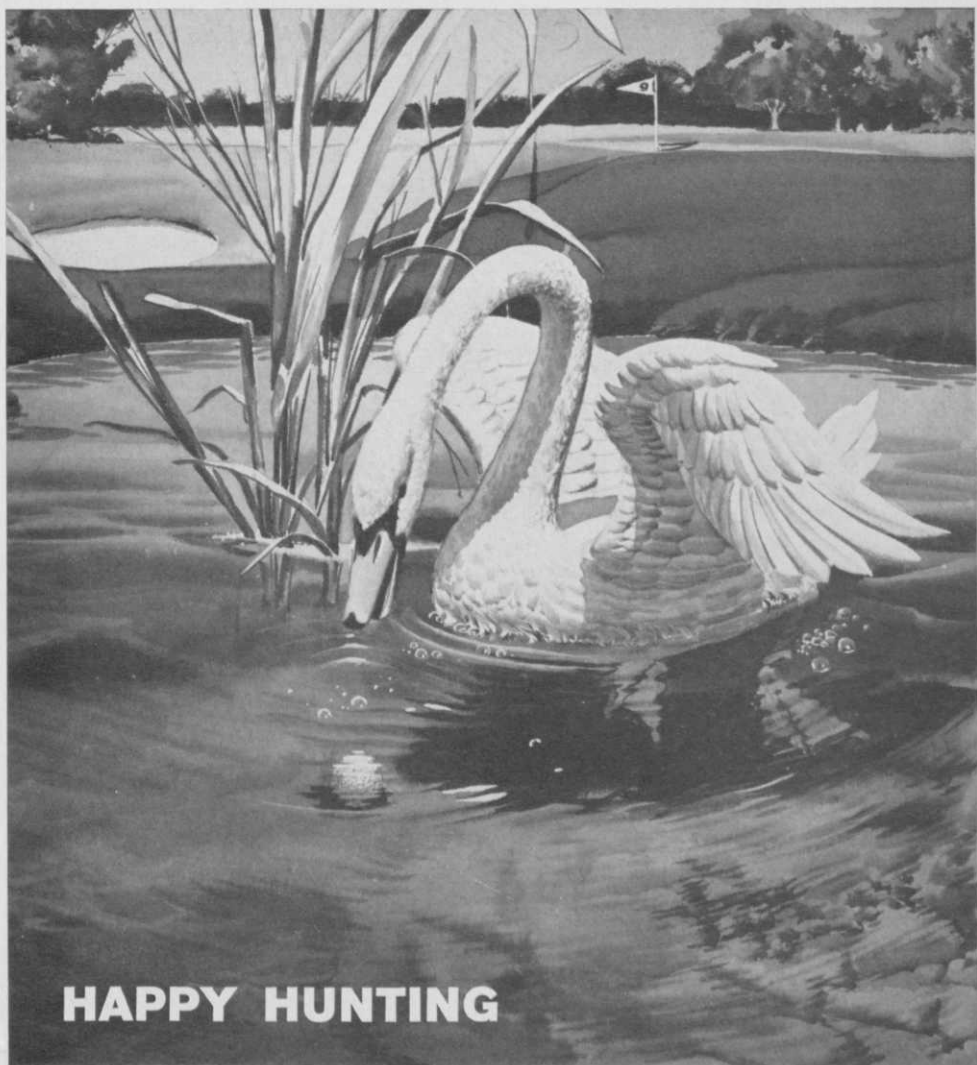
A. We, too, have been searching for such a grass. To date we have not found it. Neither do we know of anyone who has seen this grass. If and when you locate it please call us COLLECT.

Response to Lime

Q. We draw soil samples once a year for tests which guide our liming and fertilizing program (except nitrogen). We use ground limestone to keep the pH range close to 7.0. Why is it we often see a response to lime that resembles a combination of nitrogen and fungicide? The grass has better color, and diseases seem to be noticeably less. What is the explanation? (Maryland)

A. The first effect (if, indeed, any reaction is first) is that of replacing hydrogen (acid) ions on clay minerals and soil organic matter with calcium and magnesium ions, thus pro-

(Continued on page 87)



HAPPY HUNTING

TRIANGLE BRAND COPPER SULFATE

makes hunting for golf balls a much happier sport by clearing water hazards of algae, scum, murkiness, and odors. We'll be glad to tell you how to do this in an attractive free booklet on pond treatment. Write to Phelps Dodge today!



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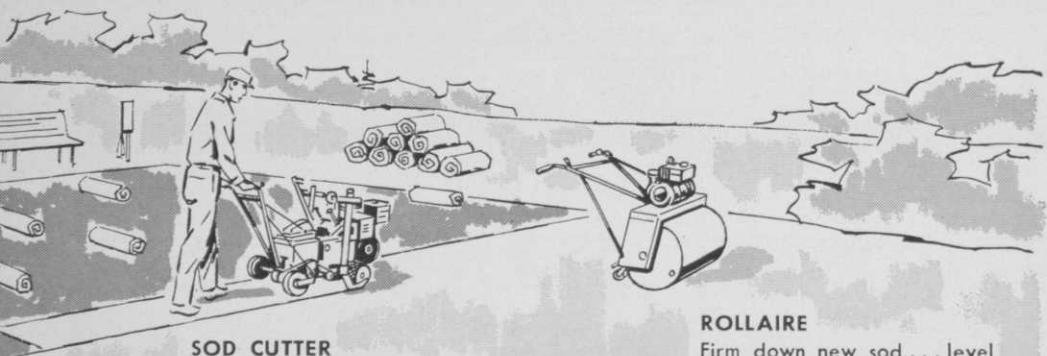
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Ryan

from the first tee to the last green

Power Equipment helps you build and



SOD CUTTER

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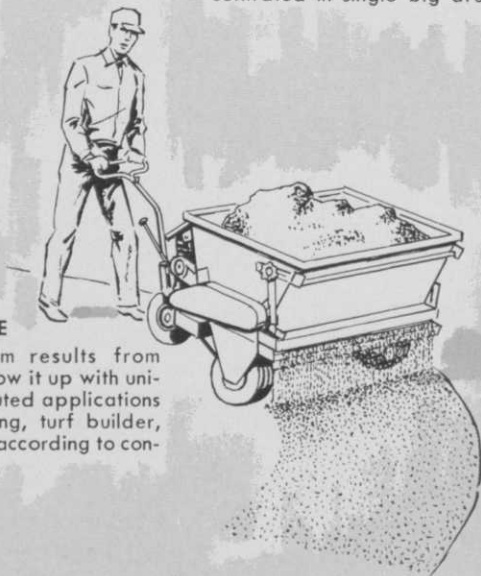
ROLLAIRE

Firm down new sod . . . level the ground or put a roll in it . . . with back-and-forth power rolling. Over 1/4 ton weight concentrated in single big drum.



SPREAD-RITE

Get maximum results from aerating: follow it up with uniformly distributed applications of top dressing, turf builder, or fertilizer—according to condition of turf.



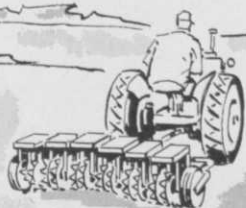
SPIKEAIRE

Touch control power disc spiking aerates and softens your greens even in hot weather with no surface disturbance. All wheels permanently attached!

maintain a tournament quality course

RENOVAIRE

Match the quality of your fairways to your greens—aerate every 2 to 4 weeks with the tractor drawn, contour aerating Renovaire. Choice of coring, slicing, or renovating tines.

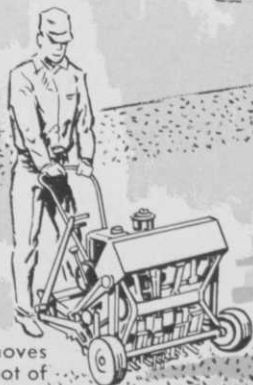


MATAWAY

Turn cores into top dressing . . . control grain . . . lift out dense thatch—this kind of care with the Mataway (or Ren-O-Thin) helps keep heavily used greens in top condition!

GREENSAIRE

Superfine aerating removes more cores per square foot of green, provides immediate relief of compaction, and doesn't interfere with play!



Ryan builds equipment for every golf course, large or small, and for every turf maintenance need. Judge it by mechanical quality, by the work it does, by the labor you save: by any standard, Ryan equipment helps you build and maintain a better quality course from the first tee to the last green. This year, get acquainted with the Ryan units you haven't used—and check over the many improvements Ryan has made in the dependable units you've been using. See your Ryan distributor or write:

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See us at the Turf-Grass Conference—Booth #1.



'Pro-Juniorized' Clubs

Golfdom starts a campaign to put more clubs in the hands of the kids and take the curse off the Trade-In dilemma

By **HERB GRAFFIS**

"Pro-Juniorized" golf clubs are a profitable and timely answer to a trade-in problem that cuts deeply into pro revenue and threaten the professionals' position as the developer of the top grade club market.

A "Pro-Juniorized" club is a used club that's cut down to the size of the lucky boy or girl who gets it. The club is re-conditioned to some extent by a professional or an assistant and fitted to the youngster for whom it is intended.

"Pro-Juniorized" is a new merchandising idea to convert a continually growing club trade-in dilemma into something very good for the professional as well as his members and their golfing children.

The foregoing summary of the "Pro-Juniorized" program, to be introduced by foremost pro golf merchandisers this year, presents high points of conclusions reached during 1963 tests of an idea that was introduced at a conference of the faculty of the PGA Business School in Clearwater, Fla.

Selling expertly fitted golf clubs, and more of them, are topics frequently brought up and discussed by Business School students. The assistants realize that trade-in allowances are the key to increasing new club sales. They also know that trade-in allowances are getting out of hand at many clubs because pros aren't in a favorable position to bargain

with members who are hard traders.

Veteran professional teachers at the 1963 Business School admitted that they didn't have all the answers to the trade-in problem which is involved in nearly 70 per cent of top quality club sales.

The trade-in situation thus is at a point where a good part of new club sales call for two sales: Those of new clubs traded as well as those traded in. The situation is made even more difficult because the acceptance of trade-ins is sharply reduced by competition of low-priced new clubs. This is especially true in the case of women's club purchases.

In looking for the answers to trade-in deal questions, the Business School teachers agreed that because of the great volume of used club sales, figures reported to and by the

Athletic Goods Manufacturers' Association do not accurately reflect the situation in the golf club market.

At the school, professionals also expressed the belief that manufacturers and professionals, through concerted planning and effort on a nationwide basis, might make an asset out of a growing evil, as the automobile industry did with used cars in increasing the overall market instead of allowing them to pile up in the country's junk yards.

The population explosion has brought about a situation in which many hundreds of thousands of youngsters should be tak-



Bill Hardy, well known club maker (see p. 52) sizes up a petite swinger.

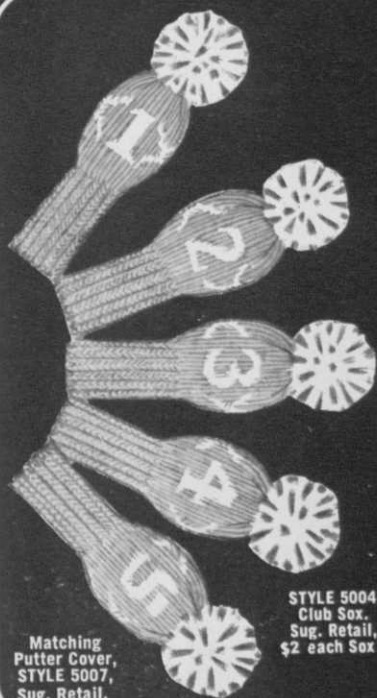
PROFIT WITH THE PRODUCTS GOLFERS WANT

Knitted Club Sox

for Nos. 1, 2, 3, 4, 5 Woods and Putter

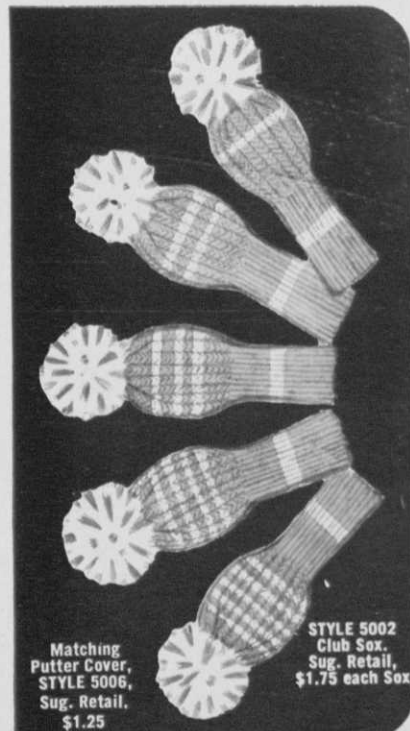
Drive in a handsome profit with these great new head covers that slip on and off club heads quickly, tuck into pocket during play. STYLE 5004 features a knit orlon lining and has the actual numerals worked right in. STYLE 5002 has narrow stripes to indicate club number. All are washable, high bulk orlon acrylic — won't stretch, shrink or fade.

Order your Club Sox now . . . in Red, Black, Gold, Gray, White, Green, Beige, Brown, Sapphire Blue, Sky Blue, Red/Black, Black/Red — with peppered pom. DELIVERY ANY TIME YOU SPECIFY . . . packed bulk any assortment, or GIFT BAGGED IN SETS.



STYLE 5004
Club Sox.
Sug. Retail,
\$2 each Sox

Matching
Putter Cover,
STYLE 5007,
Sug. Retail,
\$1.25



Matching
Putter Cover,
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Club Sox.
Sug. Retail,
\$1.75 each Sox

Sports-Mate Tote Bags

Ladies love this smart, compact "hold-all" that's just 4" W. x 7½" H. Zipper closing. Leather-looking vinyl in fashion colors. About \$2.



Pom Tam Knit Sports Caps

Flatter every hair-do, fit every head. Orlon acrylic or wool. Individually bagged. Bright or light colors. Sug. Ret. \$2 ea.



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Knit circlets are the fashion, and the fastest way to make a sales hit. 1 size fits all. Gay or pastel colors. Individually bagged.



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For after the game relaxing. Leather-looking vinyl, durable sueded outsoles. Ladies' sizes S., M., L. Fashion colors. Sug. Retail, \$2 pair.

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ing golf lessons in schools and playing a good deal of golf during school vacations. The main reason these kids aren't playing is that they haven't got the clubs. Give them clubs and they'll find some way to use them. That's where the re-conversion of clubs comes in.

The "Pro Juniorized" campaign would be well implemented if enough used clubs passed into the kids' possession early enough in the season to reduce the headaches later on when close-outs clutter the market.

Discussing the trade-in problem in Clearwater were Emil Beck, director of the PGA Business School program; Bill Hardy, a noted clubmaker who is co-pro at Chevy Chase in Washington, D.C. and lectures on club design, repairs and fitting at the PGA Florida schools; the late Horton Smith; George Aulbach; Eddie Duino; John Budd and Herb Graffis, GOLFDOM's editor. The "Pro-Juniorized" campaign is a development of their appraisal of the trade-in problem.

Not All Agree

Of course, there are some arguments against the campaign. One is that private club courses already may be too crowded. But the fact is that during the summer vacation there is plenty of open time at the clubs for youngsters who have been trained to play golf properly. In a number of clubs, women's committees have taken over supervision of Junior programs which have been primarily planned by the professionals.

At many clubs the average age of members is so high that the future depends on developing more and more use of the course by younger people.

Another argument against "Pro-Juniorized" club campaign is that it reduces sales of new clubs to juvenile players. The reverse, however, has been the case, according to many pros.

Golfdom Aids Program

Advertising material in the form of letters, shop display signs, copy for club magazines, will be available to professionals from Golfdom. This material will feature the theme of making the best possible use of old clubs by getting them "Pro-Juniorized".

Further details of the "Pro-Juniorized" campaign will be presented in March GOLFDOM.

Pittsburgh to Hold Golf Show in Civic Arena Exhibit Hall

The first golf show ever held in Pittsburgh, Pa. is planned for Feb. 28 through Mar. 1. Sponsored by the Tri-State section of the PGA, the show will feature exhibits by manufacturers of golf equipment and apparel plus seminars on golf instruction, rules, regulations and etiquette.

Attending the show will be golfers from 90 Pittsburgh area clubs such as Laurel Valley, Oakmont, Fox Chapel, Allegheny County, Sewickley Heights and White Sulphur Springs. These clubs are served by 150 members of the Tri-State PGA, headed by Paul E. Erath, president.

Jim Potts, executive director of the Western Pennsylvania GA, is the show's publicity director. His assistants are Dick Groat and Jerry Lynch. Other committee heads include Joe Tucker, Fred Brand, Jr. of the USGA, Charles Kunkle and Betty Hamilton. Harry Grunnagle is business manager.

The show will be held in Pittsburgh's Civic Arena, which is convenient to downtown hotels and the famous Golden Triangle business district. Proceeds from the show will be split between the PGA benevolent fund and the Western Pennsylvania GA caddy scholarship fund.

Pittsburgh becomes the third large city to stage a big spring golf show. The others are Philadelphia and Chicago.

USGA and NCAA Ask Manufacturers Not to Favor Amateur Players

The USGA and National Collegiate Athletic Association are urging manufacturers and distributors of golf equipment and clothing to guard against making their wares available to amateur golfers without payment of current market prices.

The two associations, in a letter signed by Joseph C. Dey of the USGA and Walter Byers of the NCAA, have issued a reminder that players involved in buying below market prices forfeit their amateur status under the rules of both groups if there are confirmed violations. Both Dey and Byers are executive directors of their associations.

In their letter, Dey and Byers cite continuing reports of acceptance by amateurs of equipment and clothing for less than current market prices.

See Article on page 52