

ble to invasion. It is apparent, however, that the reason why annual bluegrass occupies turfed areas is not clear. Sprague and Burton conclude that the occupation of turfed areas by annual bluegrass, apparently, does not lie in greater tolerance to conditions of unfavorable nutrient supply, but in the ease of re-establishment of the bluegrass by seed in seasons when unfavorable soil conditions have been temporarily corrected by moderated weather conditions.

From the experimental data on hand, it is possible to conclude that grasses resistant to poa annua invasion may be obtained. Management studies are needed, however, to test this resistance, determine the effect of amount, kind, and time of nitrogen applications on invasion resistance, and to determine interaction effects on southern turf of seeding rates and nitrogen applications.

Reduces Poa Annua in Greens

By A. R. Twombly

Poa Annua and I had our first meeting at the Pelham Country Club in the late spring of 1938. That summer proved to be a hard and unpleasant one for me. The greens there were supposed to be of

South German mixed, Seaside & Colonial bents. As the years passed Poa annua had come in to such an extent that all 18 greens were infested and some of them so badly that it was 90 per cent annual bluegrass and ten per cent bents. That spring the greens were beautiful but after a few hot, humid days in the summer those greens presented a discouraging problem. In the early fall just when I had reached the zero point we had a few cool, damp days and the fall crop of poa annua became established and turned the greens into a beautiful sight once more and gave the golfers a fine putting surface.

After that first season I realized the potential danger in our greens becoming entirely Poa annua. The next few years I spent studying the growth and habits of this grass. I found that with the heavy, tight clay soil and the poor drainage we had, compaction was prevalent. This made an ideal condition for Poa annua but it caused the permanent grasses to have a very shallow root system.

To correct this condition I carefully checked all the sprinklers we used to determine the proper size and capacity so each green would receive only the amount of water it could absorb. Local-

Fred Haas & Associates

P. O. Box 900 CHICAGO, ILL.

DISTRIBUTING AGENTS EXCLUSIVELY TO GOLF PROFESSIONALS

Imported Scotch Irons • Custom Model Fred Haas Woods

Luxury Line Featherweight Gloves • Luxury Line Head Covers

Freddie Haas Putters • Ed Frost Hats and Caps

ADJUSTA CARTS

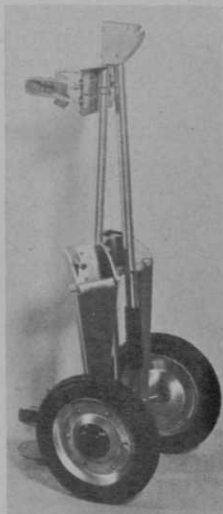
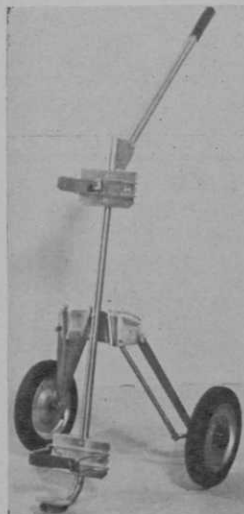
Mfg. by Bohn Mfg. Co.

Most Practical Golf Cart of All

Perfect balance — Grease packed ball bearing wheels — Finger-tip pull — Easy, fool-proof locking — 10 seconds to open or close — wheel base adjustable to three widths — holds any size or type of bag. Locked cart may be easily carried, stored erect or wheeled in folded position. Tough wrought aluminum — no brittle castings. Full year guarantee against defects in workmanship or materials.

Retails at \$25. F.O.B. Streator, Ill.

Bohn Star Rental Carts. Rugged Construction to Withstand Hardest Abuse.



to try early spring fertilizers as a partial control of *Poa annua*.

During the next five years I studied each green individually and experimented on some greens and on parts of others. Each green that had been fertilized early in the spring showed a decline in annual bluegrass and a strengthening of the bents. Some of you may feel that with the early fertilizing *Poa annua* will grow more luxuriantly and therefore crowd out the bents but from my experience I found just the reverse was true.

Do not worry about the heavy growth of *Poa annua* for it will soon die out. If the soil conditions are favorable and there is sufficient amount of nitrogen available the bents will make a strong, deep rooted, sturdy turf good for the golfers and hard for the next crop of *Poa annua* to penetrate.

When I resigned at Pelham last fall to accept the position as Principal Park Supt. at James Baird State Park, *Poa annua* on the greens had ceased to be a problem at Pelham.

I do not say this is a cureall. I do know that under our soil and climatic conditions the combining of a P H level of about 6.5, frequent aeration (six times last year), careful watering and the fertilizing procedure I described did reduce *Poa annua* to a great extent. What I did not eliminate I was able to hold throughout the season. If you make conditions more favorable for the growth of the permanent grasses and maintain a program of adequate fertilization to keep the bents strong and vigorously growing, *Poa annua* will cease to be a problem.

Greenwood Experiments to Improve Its Course

By Johnny Cochran
Pro-supt., Greenwood (Miss.) CC

Our turf experiments at the Greenwood CC started back in 1946, about the time or just before the beginning of the Tifton Experimental Station. There were many things we didn't know about Bermuda grasses and since there was no Tifton to give you the answers, we set out to try and find them.

Our first experiments were started after we had established a nursery of perhaps 500 sq. ft. of common Bermuda. After a good putting surface had been provided various heights of cutting were used. One half inch, $\frac{3}{16}$, $\frac{1}{4}$ and $\frac{1}{8}$ inch cuts were made. Some strips were cut twice daily, every other day, and some every third day. At the end of the season it was found that the strips we started out with and maintained with a daily cut of $\frac{1}{4}$ inch in early part of season and later in drier and hotter part of year switched to

GOLF

isn't

ALL



Sure Shawnee is famous for golf. But this complete 1000 acre resort offers a lot more . . . wonderful vacation pleasures for all the family. Swimming pool, tennis courts, boating, riding, dancing. Gay, smart decor . . . cheerful, airy rooms or cottages . . . cool mountain setting . . . supervised children's activities . . . excellent food and service. Enjoy a perfect vacation at moderate rates.

Write for booklet and rate schedule

John Stubblefield, General Manager
Harry Obitz, Professional

Shawnee Inn

/HAWNEE - ON - DELAWARE

PENN./YLVANIA

It's an Umbrella!

MAX FAULKNER
(British Open Golf Champion) says:
" . . . undoubtedly one of the most sensible items of golfing equipment I have ever seen"



It's a Seat-Stick!

It's the FEATHERWATE Umbrella Seat-Stick

At last, a walking stick, a comfortable transportable seat, and a full-sized umbrella all in one. Many styles available with gay colored panels; plain green, maroon or black, or Tartan covering. Luxury models with leather sling seat.

"FEATHERWATE" SEAT-STICKS

Several styles with all-metal or leather seats in various colors or Tartan design. Made in rustless lightweight alloys. There is a "Featherwate" for every member of the family—including junior!



A "Featherwate" Seat-Stick is a must for all American Sportsmen and Women.



Full details and Trade terms from:
GENERAL SPORTCRAFT CO. LTD.
215 Fourth Avenue, New York 3, N.Y.
or **COMBINED AGENCIES CORPORATION**
Suite 1031 National Press Building, Washington 4, D.C.
MADE BY BUTTONS LTD. BIRMINGHAM 6. ENGLAND