A photograph of Herman Mitchell, a renowned caddy, on a golf course. He is wearing a white visor with "HERMAN" written on it, a white polo shirt with a "PennLinks" logo, and bright red pants. He is crouching and holding a fishing rod that is ingeniously constructed from a golf putter. The fishing line goes from the putter head down into a hole in the green. He has a joyful expression on his face. A white bucket of PennLinks fertilizer sits on the grass next to him. The background shows a lush green golf course with trees under a clear sky.

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On the cover: The superintendent as the last piece in a puzzle.

## 24 COVER STORY: ELEMENTS OF SUCCESSFUL SUPERINTENDENTS

by Jerry Roche. It's the little things that separate a good golf course from a great one, and a good superintendent from a great one. Here are some tips, as seen through the eyes of our country's more astute superintendents.

## 30 EQUIPMENT GUIDE

How do landscape contractors and golf course superintendents stock and supervise all that machinery and other equipment they have? This poll of some green industry professionals lends some clues.

## 40 SAFE AND SECURE

by Phil Henry. If you venture into landscape lighting installation, learn to choose the proper mounting accessories.

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by John Allison. A grab bag of ingredients influences a golf course's profitability: course layout and design, length of playing season, membership base and club patronage. But how about the golf car fleet?

## 54 PROPER PRUNING RESPECTS TREES

by Alex Shigo, Ph.D. If you prune properly, the tree can readily cope with the injury. If you prune improperly, you threaten the tree's health.

## 60 BEYOND THE GREENS... WHY NOT REDS, YELLOWS AND PURPLES?

Bedding plants add color and beauty around the golf course.

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## The turfgrass industry mourns

Business is up. Profits are holding steady. 1990 has been a good year for the turf and landscape industry.

Or has it?

News comes this morning, as we prepare to send this issue to the printer, that Dr. Fred Grau passed away last night (see "Green Industry News"). Barely a month ago, Harry Gill was taken from us.

The word "great" is not one to be taken lightly. But when describing the contributions Fred and Harry made to this industry, no word other than "great" can be used. For they imparted not just knowledge, but they gave of themselves, each in his own unique way, each for many, many years.

Neither could sit back and watch life pass before him. In their later years, both disliked not being able to get their fingernails dirty every day, Harry at Milwaukee County Stadium, Fred at whatever turf research plots were handy. Harry kept active even after a multiple heart bypass. Fred, once threatened by leg amputation, witnessed numerous turf shows from his wheelchair.

Harry was the consummate team player, forever offering his assistance to any athletic field manager who might ask. He spent countless hours speaking to others on the phone, giving informative—usually hilarious—speeches at seminars, sitting at the bar swilling over the seemingly endless tales that enthralled whoever might be listening. (And he always drew a big crowd.)

Fred was a far quieter countenance, cerebral, at one with nature. The man dedicated his whole life to the advancement of turfgrass science, and he enjoyed it. My, how he enjoyed it!

"The big window at my desk gives me a clear view of my trouble-free lawn and the healthy plantings," he once wrote. "The brilliance of the grass is remarkable. Last night, a white frost covered all. Today, it's 45 degrees, the frost is gone, but the grass color is still striking. I get inspiration from this view."

Harry claimed his degree was from the College of Hard Knocks; Fred earned a Ph.D. from the University of Maryland. So while Harry was a popular speaker, Fred was a prolific writer, sharing with this office many of what he called his "Musings." Yet much of their material could not be published in this magazine, Harry's because it was too ribald, Fred's because it was too philosophical.

Fred once wrote—after this magazine had made a modest donation to his "baby," the National Sports Turf Council—that he was proud to be our friend.

He had it all wrong. It was the turfgrass industry that was proud to have such friends and benefactors as the kindly Fred Grau and the fascinating Harry Gill.

The industry mourns their passing.

Jerry Roche, editor-in-chief

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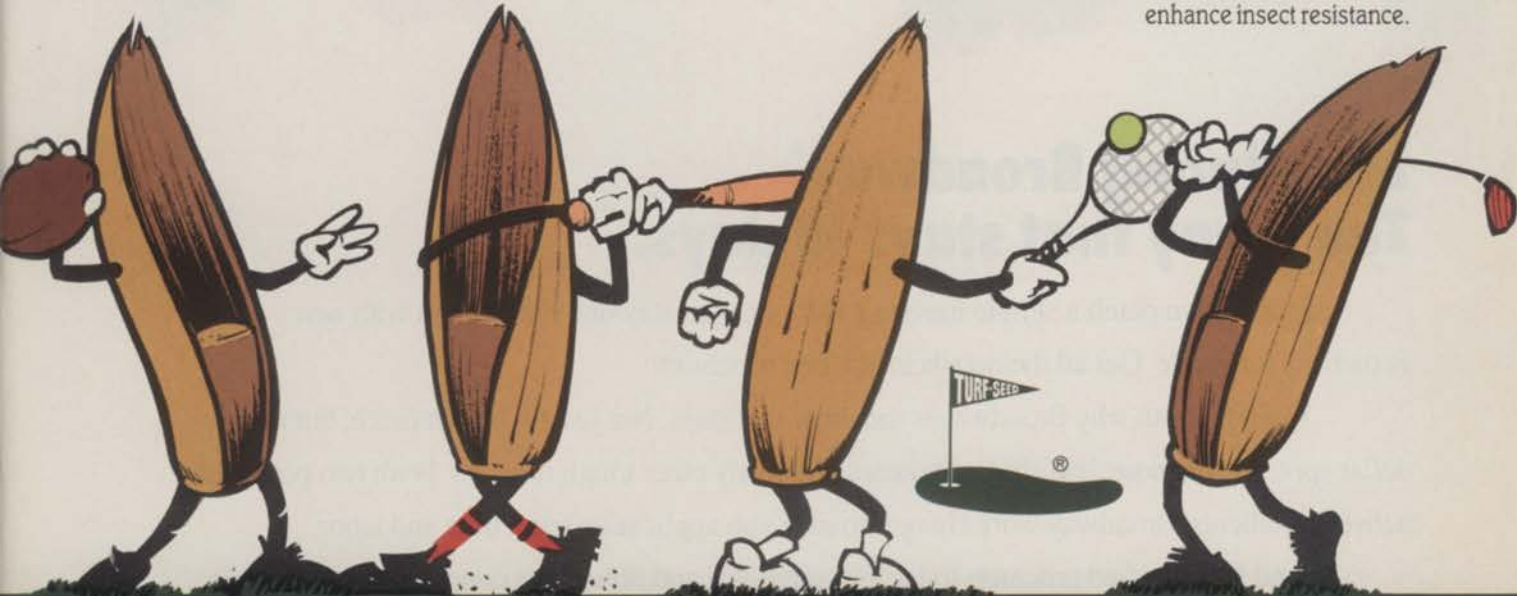
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### PEOPLE

## Grau left his heart to the green industry

CHEVERLY, Md. — Dr. Fred Grau closed all of his letters with, "Sincerely yours, for better turf."

In a life devoted to the research and development of improved turf species, his accomplishments and discoveries were many.

Grau, 88, died here Dec. 1, 1990 of congestive heart failure.

Born in Bennington, Neb., Grau earned his Ph.D. from the University of Maryland in 1935. In Pennsylvania, he was the nation's first extension turf specialist.

Perhaps Grau's most enduring accomplishment—and what he himself called "the discovery of a lifetime"—was finding crownvetch along Rt. 222 in Berks County, Pa. Grau later remembered standing at a fork in the road, wondering which way to turn.

"I turned right, and discovered a cinder-and-shale pile covered with beautiful pink blossoms. That was the crownvetch industry in its infancy. Had I turned left, I would never have stumbled upon it."

Grau and his first wife Anne developed and promoted Penngift Crownvetch. Today, it's Pennsylvania's official beautification and conservation plant, and is used along roadsides worldwide.

### A time of discovery

Grau's timely presence during the most important period in turf science history cannot be overstated.

His contemporaries in the early 1930s included O.J. Noer, H.B. Musser and Lawrence Dickenson. Grau was considered to be the last remaining research giant from among the earliest turf industry pioneers.

Grau's enthusiasm for Alta and Kentucky-31 led to the later development of the fine leaf tall fescues. In 1950, he played an active role in the research and release of Merion Kentucky bluegrass and Meyer zoysiagrass.

Grau and Musser collaborated to develop Penn-cross bentgrass in 1950-51.

### Friend to students

As director of the USGA Green Section, Grau established fellowships that enabled more than a few research students to earn advanced degrees.

Dr. James Watson—for whom Grau obtained a grant in 1946 for Ph.D. studies at Penn State—said that Grau never lost interest in his work.

"He was dedicated to the improvement of turfgrass throughout his adult life," said Watson, "and he continually sought new avenues to enhance the practical and scientific aspects of the industry. No question about it, he loved the industry."

### Designed equipment

Grau also found ways to improve turf equipment. In 1938, he and Dr. C.N. Keyser built the first hydro-seeder for use on the



FRED V. GRAU  
1902-1990

Pennsylvania turnpike.

As a consultant to West Point Products in Pennsylvania, Grau worked with Tom Mascaro to develop and patent the "Aerifier," a spoon-type turf cultivator.

"He was the most knowledgeable man I ever met in my whole life," recalled Mascaro. "He was a brilliant speaker and lecturer who could inspire many people."

Grau and retired superintendent Eb Steinecker were friends for 60 years. Steinecker visited Grau the day before he died.

"He could hardly talk, he had such a bad cold," said Steinecker. "So I said, 'Let me do the talking for once.' He said, 'Let's keep in touch; I have so much to tell you...' He was always clicking."

*continued on page 13*