GRAU *from page 15*

small plots of weedy turf with 2, 4-D and Carbowax at the Plant Industry Station at Beltsville, Md. Soon after, the American Society of Agronomy recognized turf as part of its prestigious agricultural empire. From then on, turf had a voice.

In 1933, two years out of the University of Nebraska, I earned my B. S. degree at the University of Maryland studying "Chemical Weed Control in Turf." The physical division between the campus where I had my plots and Highway U. S. 1, which runs through the university, was a decrepit barbwire fence. Turf conferences then were only three or four years old and we had only "greenkeepers" on golf courses. Short courses had not yet been proposed. We had just entered a period of recession or depression. The entire Green Section staff virtually was laid off. Money was tight and jobs were few and far between. The National Assn. of Greenkeepers was only a few years old. Two years later (1935) Grau discovered crownvetch on a hillside farm in Berks County, Pa., which was destined to launch a new agricultural industry, hitherto unknown.

In 1923 the USGA Green Section was two years old. Piper and Oakley's book, "Turf for Golf Courses," had been published only six years earlier. I was following a cultivator back and forth through a Nebraska cornfield, having finished high school two years earlier, future vastly uncertain. The USGA Green Section Bulletin was discussing the killing of dandelions with an ice pick dipped in sulfuric acid.

Nineteen hundred thirteen found a turf garden in the Philadelphia area. Mr. Taylor purchased the turf plots from Mr. Olcott in Connecticut and moved them to Philadelphia. The grasses were predominantly fescues, which did not do well in the heat and humidity of southeastern Pennsylvania. The turf plots at Rhode Island were in their 15th year. The most popular fertilizers were bone meal, sulfate of ammonia and horse manure. Guano and Chilean (sodium) nitrate also were used.

The next 10-year jump takes us to 1903. I was then one year old and remember little about anything. Golf was on its way, but courses were primitive as were maintenance methods. Sand greens or mowed pasture sod were considered a great achievement.

A calm dispassionate look at the events of 70 years surely must give us a sense of satisfaction for having achieved so much in so short a time. At this point, it would serve no useful purpose to go back beyond the point where no one living can remember. But let's maintain a "sense of history," so that we can better appreciate the present and plan for the future.

Q—*What can you tell us about the idea of sterilizing soil (or turf) with anhydrous ammonia? We heard that it was discussed at one of the conferences.* *(New York)*

A—The idea seems to have originated in Kansas with Dr. Ray Keen, who tried it on a small scale on the turf plots near Manhattan. William E. Lyons Sr. of Canal Fulton, Ohio, actually built a machine and sterilized soil and turf on a field scale. In his lectures at Penn State and at Purdue, he said that he used 400 pounds to the acre of actual N (about 600 pounds of anhydrous) at a cost of $21 an acre for material. Excellent kill of seeds and plants was reported to a two-inch depth. Turf seeds and plugs of sod planted 24 hours later flourished, stimulated by the nitrogen. Later some deep-rooted weeds (dandelion, quackgrass) emerged from growing points below the two-inch level. Lyons is encouraged to further modify his equipment for greater effectiveness. He is enthusiastic about the prospects of this new approach to sterilization.

Q—*We have read your column for years and we notice that you often refer to potassium sulfate (K_2SO_4). We infer that it is preferable to muriate of potash (KCL). Has the trade developed distribution of a fine powdered soluble K_2SO_4 that can be put into the spray tank without clogging the nozzles with gunk? (Pennsylvania)*

A—I shall continue to emphasize K_2SO_4 because I believe that the sulfur is a big plus for intensively-managed turf. I've been riding herd on some of the big companies that say they are producing, or going to produce, the fine powdered soluble sprayable potassium sulfate. To date I've had some good promises (and a lovely sample), but can't seem to find the product in the market place where golf course superintendents can buy it. About all I can say is, "Keep the faith." □