DOC'S DUGOUT - An Inning From Our Past -

Dr. William H. Daniel - A Man with Ideas Ahead of His Time - Part II

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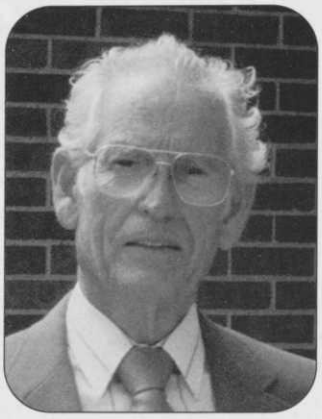
In the early 20th Century there was a man with a lot of ideas, visions and prophecies but no one would listen to him and he died before he saw his dreams fulfilled. His name was Billy Mitchell who advocated a separate air force and was outspoken on his military views on air tactics. In 1926, Mitchell received a court martial for insubordination for his views. In many respects Dr. Bill Daniel's life can be compared to Mitchell's, his life was filled with new views and ideas that were sometimes doubted and many times criticized by many of his peers and colleagues. Although many of his innovations were not accepted at the time, they are fairly commonplace today in the world of sports turf. We will examine some of these ideas in this issue and more in future issues.

A Pioneer in the Area of Turfgrass Science

Improved Turf Varieties

During the early years, after the introduction of Merion Kentucky bluegrass in 1947, many research scientists began to investigate ways to improve the grasses available to the turfgrass industry. Bill Daniel is responsible for introducing Evansville creeping bentgrass and Midwest zoysiagrass (1963) and later Sodco Kentucky bluegrass (1967). He tested



his ideas, attempted different management practices and always looked for the best way to produce a better grassy carpet. Bill was one of the first advocates of blending cultivars /varieties of the same species when establishing turf. This practice is common today, particularly with cool season species such as Kentucky bluegrass, perennial ryegrass, tall fescue and, to some extent, with creeping bentgrass. Blends are formulated to reduce disease susceptibility, improve overall color, texture and density, and to better cope with environmental stresses and management practices, to name but a few.

Crabgrass Eradication

In the process of trying to find a control for crabgrass it was discovered that calcium and lead arsenate not only

continued on page 11

DOC'S DUGOUT - An Inning From Our Past - Dr. William H. Daniel - Part II

continued from page 10

were effective on crabgrass but also reduced the Poa annua population and inhibited its germination. Through field trials, greenhouse experiments and field-testing on golf courses a procedure was developed which essentially eliminated Poa annua from golf course turf. Even though Bill discovered that both lead arsenate and calcium arsenate were effective, he promoted the use of calcium arsenate because it was less expensive, faster acting and perhaps less toxic to wildlife. According to one of Bill's former students and golf course superintendent, Charles Tadge (Vineyard GC-Cincinnati), "Many of us had great success with the calcium arsenate program. However, there were two primary deficiencies with the program:

1. The process took several years to achieve the desired results. As the arsenic accumulated in the soil the Poa became sickly and eventually died. A plan was needed for the replacement of the Poa with a desirable turf. There would be a transition period with less than desirable turf conditions.

Also good drainage was a must since it was observed that, in areas that held water, the calcium arsenate would kill the Poa much faster and make the establishment of the desired species more difficult.

In Bill's enthusiasm for the program he sometimes did not emphasize strongly enough the problems that would be encountered by the loss of Poa on greens or fairways. Some superintendents got into real trouble with their members , consequently, the arsenate programs were only successful when preceded by good communication and information about the risks.

2. During the early experiments with the arsenicals it was discovered that they worked best when available phosphorus was reduced or eliminated. Dr. Bill was so successful in promoting the reduction or elimination of phosphorus in fertility programs that the erroneous concept has survived to this day - that if phosphorus is reduced or eliminated the Poa annua will be reduced or eliminated. This has not been the case."

As a result of this early work, Bill's ideas and encouragement helped convince Chipman Chemical Company to produce a pelletized calcium arsenate, "Chip Cal", which was marketed in the 1950's.

" When you're out seeing so many problems, problem solving forces one to package ideas. You absorb from what's out there, you learn a little from each situation, and that makes you want to be more useful - and that lets more work get done."

Dr. William H. Daniel

(Part III will appear in next month's issue and will discuss Bill Daniel's contributions in the area of soil technology and sports field construction.)