of management that is demanded. Merion can't be written off, even though it has been found wanting. Of the fairway bents, Colonial, because of its great density and resistance to disease, may be the answer in the cool season belt. In the middle belt, U-3 and Meyer zoysia appear to be providing many of the answers, but they must be observed further before a final decision can be made.

Can't be Analyzed

Bill Daniel of Purdue was inserted into the program proceedings as a last minute replacement and spoke without benefit of any prepared notes. The Purdue agronomist said he is somewhat amazed at the number of crabgrass killers on the market, but for the sake of the gullible, including some supts., he hopes all of them work. "If they don't," he added, "America may become absolutely barren within the next decade. I'm sure some of those formulations defy chemical analysis."

In the same vein, Daniel warned against riding off in 20 different directions in experimenting with other chemicals and fertilizers. He recommended using unfamiliar products on a small scale, one at a time, and observing their reactions before going overboard and saturating the entire course with them. "Many a supt's job," Bill wryly remarked, "has ben lost for less than this."

The Well-Rounded Man

Speaking on the topic, "How Far Can We See?" Gene C. Nutter, executive dir. of the GCSA, reiterated what had been said earlier about the supt. concentrating on becoming a better business manager, but in so doing, not to neglect the technical side of his occupation. What he should strive for, Nutter declared, is to become a well-rounded individual, proficient in handling all of the score or so of duties he is called upon to perform. Nutter added that, as far as he can see, the supt. is beginning to measure up more and more as a businessman, and that his next goal should be to improve his member and public relations.

A significant point made by Nutter: If five per cent of the veteran supts. retire every year, and if as many courses continue to be built annually as in the last decade, there will be a demand for 350 new greenmasters every year. Today, only about 50 young men are graduating from turf management school each year. How can the situation be remedied? Through more scholarship grants, more winter school courses and more in-training programs sponsored by clubs.

Fourth Session

Faulty Focusing Foils Film Story

The Wednesday morning program was inaugurated with the showing of a Milwaukee Sewerage Commission movie. Next came a well received "chalkie-talkie" dissertation on club landscaping by John A. Weall of Ontario Agriculture College. He was followed by John F. Cormon of Cor-
nell University and Ralph E. Engel of Rutgers University.

The Sewerage Commission color film, narrated by Charles G. Wilson, with background music by Walt Disney, could be given no more than one-star rating because of projection trouble. The local operator didn't seem to understand the mechanism and lost both the voice and the music and occasionally, the picture. What undoubtedly would have turned out to be an excellent description of maintenance operations and installations at Woodhill in Minneapolis, Medinah, near Chicago, LaChute in Canada, an Idaho Falls course and other sites, simply was mangled by inept projection. There was a near repeat performance the following day by the same operator. He managed to get the machine in focus but couldn't find the cup, when it came to inserting the sound plug.

**Landscaping with Art**

Following the debacle of the projection machine, order was restored by artistic John Weall who used colored chalk and a blackboard in describing how a rather bleak landscape can be made to breathe when a person knows where to plant trees, shrubs and flowers. Weall offered the following tips: Make sure that the trees and shrubs that are planted are matched to the soil; Slow growing hedges such as privet and cedar, trimmed so that they are wider at the bottom, give the best long term results; Don't smother anything with vines, but spread them out; Perennials should be planted in large beds. Care should be taken to plant flowers that bloom in early summer, others in mid-summer, and still others that bloom in the fall so that at no time during the warm season does the bed have that dead-stem look.

**Fertilizer Economics**

In his talk on practical fertilization, John Cormman discussed the economics as well as the effects of applying various fertilizers. Contrasting costs, he stated that the soluble type is cheaper than insoluble so far as initial outlay is concerned, but the latter is less expensive to apply. It also has an advantage, though slight, where leaching is considered and it can be applied with a little less caution than the soluble material because it is less apt to burn turf. So far as nutrients are concerned, one is probably no better than the other.

The Cornell agronomist said that supts. should pay more attention to soil and climatic factors in determining how much and how often turf should be fertilized, but he didn't discount the "eyeball" test, saying that this, of course, is something that has to be acquired through experience. As for phosphorus and potash, Cormman didn't recommend any specific dosages, saying that care should be taken that there is no deficiency of these nutrients. In the final analysis, however, Cormman said that turf response depends largely on the amount of nitrogen applied.

**Old Water Argument**

The argument as to whether water is a friend or foe was discussed as vehemently 30 years ago as it is today, according to Ralph Engel, Rutgers agronomist. He added that he has seen enough of prolonged arid spells that have resulted in serious loss of fairway grasses in New Jersey to declare himself on the side of a good irrigation system. "It can be a supt's best friend," said Engel, "if it is used with propriety."

Warning against the overuse of water, Engel declared that it tears down the soil's structure, leading to serious compaction and thereby poor air and nutrient circulation. "Samples show," explained the Rutgers man, "that it is much better to have 30 per cent than 80 per cent saturation."

For best results in watering, Engel made these suggestions:

- Proper timing depends largely on the appearance of the grass along with soil moisture, things that can be determined through the use of a little judgment;
- There should be a happy balance between the use of water and fertilizer; too much of the latter only calls for pouring (Continued on page 108)

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**GCSA Officers and Directors**

Officers and members of the board of directors of the GCSA, elected at the Toronto convention, are: L. E. Lambert, Prairie Dunes CC, Hutchinson, Kans., pres.; Sherwood A. Moore, Winged Foot, Mamaroneck, N. Y., vp; and Edward Roberts, Jr., DuPont CC, Wilmington, Del., sect. They are: L. W. DuBose, Jr., Houston (Tex.) CC; Roy W. Nelson, Ravilhoe CC, Homewood, Ill.; Walter F. Wagner, Lancaster (O.) CC; David S. Moote, Rosedale Golf Assn., ltd., Toronto; George L. Lanphear, Ojai (Calif.) CC; and James E. Thomas, Army Navy CC, Arlington, Va.
they have four children: William, a methods engineer who lives in New York City; Dorothy, a teacher; Mary Lou, a medical technologist; and Joyce, a registered nurse. The three girls live in Kansas City.

His duties with the regional and national GCSA in recent years have caused Red to cut back on his golf playing. This, and the fact that he says age has caused his game to deteriorate, have left him in the slightly unhappy position of being satisfied when he breaks 100.

No. Calif. GCSA Officers

Northern Calif. GCSA has elected Ellis Van Gorder, Stanford U. GC supt., pres. for the coming year. Other officers are: vp. W. R. Boysen, Sequoyah CC, Oakland; and sec.-treas., Clifford A. Wagoner, Del Ri oCC, Modesto. Directors are Ted DeTata, Roy King, Paul Paulsen, Charles Whitaker and R. L. Viergever.

Iowa GCSA Conference

Annual turf conference of the Iowa GCSA will be held Mar. 14-16 at the Memorial Union, Iowa State University in Ames.

Toronto Convention (Continued from Page 50)

on more water;

It is only necessary to moisten the top six ins. of soil. Rate of application can be determined from this;

Water is most effective in lime soils. Most courses have acid soils which should be counteracted for best results from watering.

Fifth Session

15 Speakers Appear on This Program

Art Twombley of James Baird State Park, Pleasant Valley, N. Y., headed a panel of supts., who told how attention to details can make the difference between an ordinary course and an exceptional one. His co-panelists were Andy Bertoni, Meadowbrook CC, Northville, Mich., George L. Lanphear, Ojai (Calif.) CC and Andrew Salerno of Grossinger CC, Ferndale, N. Y. Then came Robert F. Moote, Oakdale CC,