

a showing of the "Unchained Goddess", a film thriller made by Bell Laboratories (Pacific Telephone Co.) to show the workings of the weather. Several cartoon characters, born of superstition and named Meteora, Cirrius, Boreas, Thor, etc., sit on a low slung cloud in this drama and are given a scientific explanation of what really generates hurricanes, tornadoes etc. An old U.S. weather bureau type rather smugly tosses such terms as synoptic, adiabatic, etc. at the confused mythological creatures and it isn't long before your sympathies are with them. The thing that saves the show and gives it at least three stars is the Coriolis Carnival, a clever sequence that shows how the earth's rotation puts a curve in the wind.

Fourth Session

Yankee Greenmasters Describe Their Methods

Northern and Eastern supts. presented this program under the direction of James R. Watson, Jr., Toro Manufacturing Corp. agronomist. L. R. (Bob) Shields of Woodmont CC in Rockville, Md., spoke on off-season operations and Ted W. Woehrle of Beverly CC, Chicago, described the damage done in the Midwest by the now famous ice sheet of 1961-62. A panel composed of Ernest Schneider, Big Springs, Louisville, Joe Butler, United Shoe CC, Beverly, Mass., and Ray Gerber, Glen Oak, Glen Ellyn, Ill. discussed some of the operational highlights at their clubs. The final speaker, John T. Singleton, irrigation specialist of Manchester-by-the-Sea, Mass., explained the installation of sprinkling systems.

Boosts Employees' Attitude

In order to keep the maintenance crew busy in the wintertime, said Bob Shields, a supt. has to do some pretty extensive summertime planning. When he resorts to spur-of-the moment decisions to keep his men either looking busy or out of sight during the cold months, very little is usually done that is constructive. Shields ticked off a long list of jobs that ordinarily need to be done, and suggested that they be worked in around a major project such as landscaping or machinery overhaul.

At Woodmont, Bob said, he has a program that has given a big boost to em-



So many manufacturers showed their products at the GCSA convention that it was necessary to put them in an annex to the exhibit hall.

ployee morale. Members of his crew meet regularly to discuss maintenance problems and review routine. Their education is furthered by studying diagrams and charts and viewing slides. Every so often the Rockville menage makes a trip to a neighboring course to get ideas on practices it can fit in with its own.

Describes 1961-62 Glacier

Ted Woehrle, one of the GCSA's own, and suspected of doing some moonlighting in recent months in public speaking classes, gave an excellent description of the damage caused throughout the Midwest in 1961-62 by what almost amounted to glacier conditions. Many courses were locked under an ice sheet for about 100 days in that trying winter and when the thaw finally came, the majority of their greens were found to be in pitiful shape. It was agreed that the ice cover had so compacted the turf that oxygen was shut off and such a heavy concentration of carbon dioxide was built up that roots and blades simply didn't have a chance.

It took a crash program to bring the greens back, Woehrle said. This consisted of multiple aerification, verticutting of dead areas, extensive re-seeding, fungicidal treatment and light but regular fertilizing. Some supts. used polyethelene covering to speed up germination. At courses where it was possible to remove or break up the ice cover during the warm weather breaks, damage was not severe, Woehrle concluded.

Converts to Bermuda

The Yankee panelists, Ernest Schneider, Joe Butler and Ray Gerber, it was noted

spoke from the experience of something like 120 years in the turf business. Schneider told how he had converted more than 50 acres of fairways at his club from what passed as bluegrass to Bermuda. Actually, said Ernie, the switch was from chickweed, crabgrass and goosegrass, as the quota of these for the entire state seems to have been concentrated at Big Springs.

To get rid of the old and prepare for the new, it was necessary to saturate the fairways with chlordane, sodium arsenite and 2-4-D, and thatch and sweep from every direction. After the U3 was planted, it was fed four pounds of N per 1,000 square feet the first year and density and uniformity of growth exceeded expectations.

A New Menace

After giving his recipe for frost removal in the late fall (sprinkle tees and greens for five minutes when the temperature drops to around 25 degs.), Joe Butler, who oversees 36 holes at United Shoe, told of a new menace. It is the maintenance of a bowling green, with which more and more supts. are going to have to contend in the future.

"The trouble is," said Joe, "that members are fussier about a green of this sort than a putting green. They get to know every blade on the greensward and you're not allowed to disturb anything. Ours is sunken and collects ice and water, but installing drainage is out of the question. The oval ball," continued Butler, "used in bowling is weighted at one end and describes a crescent when rolled. This does absolutely nothing for the turf."

The best method for maintaining a bowling green in Butler's terse estimation is to dig it out and put a swimming pool on the site.

An Artist Speaks

Ray Gerber, the squire of Glen Oak CC in Glen Ellyn, Ill., and rated one of the best supts. in the Midwest, may be an even more accomplished floriculturist. The films he showed of his flower bed arrangements would have had them "ahing" and "ohing" at the women's Wednesday afternoon garden and poker club. One of the most impressive of Gerber's outsize bouquets is a clubhouse grounds arrangement of cannas, salvia and petunias. Scattered around his course are zinnia beds,

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Tee Birdie

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hydrangea clumps, tees laced with spirea, birdhouses mounted on high poles and paths outlined in nosegays. Artistry is stamped on the way in which he curls flagstone passageways through his beds. A June day at Glen Oak must be rarer than even the poet described it, but it's all in keeping with Gerber's outlook: "There's a lot of green in a golf course," says he. "It can become awfully monotonous, so I try a dash of different colors here and there to make the course more interesting."

Water Conservation Needed

John Singleton, irrigation specialist, predicted that in the near future, water system installations for courses and other large turf areas will be computerized. The result will be that a near ideal combination of pump capacities, pipe sizes, velocities, etc. for different soil and turf types will emerge. In his speech, Singleton emphasized that piecemeal installation of a sprinkling system invariably turns out to be extremely costly. He also suggested that clubs closely examine the expense of hiring a night water man at time and one-half wage rates and compare it on a long-time basis with the cost of putting in an automatic system. It may change some thinking.

Alluding to the overall water situation, Singleton said that it is not promising in the East or Midwest. "Conservation not only is needed but soon will be widely enforced in both these areas," he remarked. "Clubs would be wise to insure future water needs by going automatic, a sure method of conserving water. If they prepare for what is foreseen as the most adverse condition in their part of the country, they won't be too badly off when the pinch comes."

Fifth Session

Maybe It's Tougher in the Southwest

Mark S. Gerovac, supt. of Oro Valley, Tucson, introduced the speakers at this gathering. They included: Donald Hogan, irrigation engineer, Seattle; Roy L. Goss, agronomist, Western Washington experiment station; James L. Haines, Denver CC, Arthur A. Snyder, Paradise Valley, Scottsdale, Ariz., and Kenneth L. Putnam, Seattle GC, the supt. panelists; E. Ray Jensen, Southern Turf Nurseries, Tifton, Ga.; and Carlton E. Gipson, Club Camp-

Comes from Switzerland to Attend Convention

Donald Harradine, golf course architect and consultant, who lives in Caslano, near Lugano, Switzerland, travelled the longest distance of any of the visitors who came to San Diego to attend the GCSA conference. He estimated that he covered at least 7,000 miles in making the jaunt which included a pre-conference sidetrip to Mexico City.

Harradine, a native of England, has been in the golf business since before World War II. He has designed and constructed about 100 courses throughout Europe and, at present, serves as a turf consultant for 52 continental clubs. Some of his more recent projects have been for the American Army in Dijon, France, at Bad Pyrmont in Germany for the British Army, and a municipal course in Athens, Greece that he designed and built. Pennecross seed for the greens at the latter installation, as well as Bermuda and Merion for the fairways, were imported by Harradine from the U. S.

estre de la Ciudad de Mexico, Mexico City.

Describes Western Irrigation

Discussing the technicalities of automatic irrigation in the West, Don Hogan said that it has been only in the last seven or eight years that semi-automatic, and later, automatic equipment, have been used on a wide scale. The trend in both systems is to smaller coverage patterns, Hogan pointed out. As for types of installation, quick coupling, impact head are most common in semi-automatic, and hydraulically operated, diaphragm types that are electrically controlled are favored where automatic systems are used.

The Seattle irrigation specialist gave a quite detailed description of the materials used in both semi-automatic and automatic installations. He estimated that it costs around \$120,000 to put in the former on a multi-row, complete coverage basis for 18 holes; cost of the automatic runs around \$150,000. Hogan predicted that fertilizer application through the irrigation system soon will become commonplace. The secret of getting uniform distribution of fertilizers or, for that matter, any chemical, is to establish constant precipitation rates. This is something that is theoretically simple, but occasionally calls