

rower for warm than cool season grasses. Minimum temperature for the growth of common Bermuda is 50 degs., for Tifgreen it is slightly less than 50 and for Meyer Zoysia, 60.

#### Water Movement Film

The third session was concluded with the showing of a color film prepared by the Milwaukee Sewerage camera duo of O. J. Noer and Charles G. Wilson. It was largely devoted to maintenance methods with emphasis on the care and building of greens and traps and irrigation installations. New and easier ways of handling maintenance jobs, improved by supts. and persons working under them, also were featured.

Following this, a time-lapse motion picture of water moving through soil was shown. Painstakingly filmed, it proved to be a convincing argument for the school of turfmen who contend that topsoil has to be homogenous in texture to insure deep and healthy root growth. The film, which took about 20 minutes, showed the progress of water droplets through a layer of topsoil about 12-inches deep and how this progress was very visibly retarded when the droplets reached a layer of dissimilar material.

#### Fourth Session

### Supts. Detect Some Shortcomings In Course Construction

Fred V. Grau of Nitroform Agricultural Chemicals was moderator of the Wednesday morning program which had as its theme, "Construction Concepts of a Course." He presented George Cobb, Greenville, S. C. architect; Warren Bidwell, supt. of Olympia Fields (Ill.) CC and Charles Danner, supt. of Richland CC, Nashville. A question and answer period, which followed the speeches by these men was, as it usually is, interrupted too soon by the bell. The morning's program was concluded with a film by the well travelled team of O. J. Noer and Charley Wilson which showed how Mel Warnecke built several greens at Atlanta's East Lake course last year.

#### Wants Supt. on Job

Architect George Cobb emphasized that he insists on two things when he designs

a course. One is that a supt. be on hand in at least the final construction phase so that he can oversee the building of greens. A second is that the contractor follow the design down to the last contour section on the blueprint.

The Greenville architect said that the secret of design is the adhering to the natural features of the site on which the course is to be constructed. The only departure from this time-tested method should come when it is seen that a succession of holes have so many similarities in appearance that they become monotonous, or when it is apparent that the layout of some holes will be decidedly unfair for the fellow who is classed as a struggling golfer.

As for built-in characteristics, Cobb stated that he is most conscious of good air circulation around greens and efficient water drainage. His fairways are built with a one per cent grade and herringbone style drainage systems are installed under all his greens, usually at a depth of about 10 inches.

#### Golf Jobs Are Fill-ins

"Too many courses are being built by general contractors who take on golf jobs to fill in during slack times," Warren Bidwell declared. "Perhaps this wouldn't be so bad," he added, "if the supt., who is to take over when the course is completed, were on hand to see what's going on during the time the course is being built. But usually this is not the case. As a result, numerous clubs are finding it necessary to spend important money to correct mistakes made in the original construction, or, if not, they are often disappointed with the mess they have on their hands after the course is completed.

"Perhaps," Bidwell continued, "we shouldn't be too sympathetic with them. As far as we supts. are concerned, they are being penny wise only with us."

Construction sins that are being committed every day, Bidwell said, are: building of greens that are too small; contouring so that cupping areas are too small; burying of debris such as tree stumps under tees and greens; and cutting out of trees or leveling of knolls and slopes that have strategic importance so far as playing conditions are concerned.

Bidwell's conclusion: If clubs want to get their money's worth, they should insist on having their courses built by contractors who know something about golf course construction and are not mere earth movers.

### Abandoned Herringbone Design

Charley Danner, the pioneer bent green custodian in the South, told of his dissatisfaction with the herringbone system of drainage used on the first six greens that were converted at Richland CC in 1952. Channelling excess water into a narrow area, such as is done with the herringbone arrangement, Danner said, caused sloppy conditions in front of the greens during rainy weather and made these areas potential disease breeding spots.

When the remaining 12 greens were converted to bent in 1953 and 1954, the Nashville supt. said, a square U tile arrangement was installed so that the drainage became diffused. This, combined with the fact that the last 12 greens were built with perhaps more attention to improved surface drainage, has resulted in these latter putting surfaces giving much less trouble to the Richland CC maintenance dept. than the six that were originally converted.

### Suggestions for Improvements

Fred Grau prefaced the Question and Answer period by commenting on some of the things that he thinks should be done to improve both construction and maintenance. His observations: Newly built

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### Golfdom Holds Luncheon

The third annual luncheon for fathers, sons, and sons-in-law who are supts., sponsored by GOLFDOM, was held during the GCSA convention. About 70 persons attended the affair. Hosts were Joe Graffis, Sr., publisher of the magazine, and Herb Graffis, editor.

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courses should be given more time to settle; Proper soil mix and depth of mix often are neglected; maintenance buildings, at a majority of clubs, are located in too inaccessible spots; course communication systems are behind the times; many times the interval between new seeding and watering is too long — it shouldn't exceed 48 hours; there probably is not enough use of fertilizers when tees and greens are overseeded.

The questions that followed were directed, for the most part, at architects and dealt entirely with the adoption of standardized building specifications by the men who design the country's courses. George Cobb, the only architect present, emphasized that he did not speak for the designers as a group, but only for himself. He maintained that he always has built tees,



James A. Reid



George Cobb

greens, traps, etc. to what generally are accepted as reliable agronomical and physical specifications, but he doubted if these can always lend themselves to an exact formula. If nothing else, he said, the wide variances in building budgets prevent this. Architects, he also conceded, have very definite likes and dislikes and these don't lend themselves to standardization.

"Green Construction at East Lake," the Milwaukee Sewerage Commission film that concluded the morning's program, traced the entire operation from the leveling of the site to soil sterilization and seeding. One of the interesting sidelights of the film was the showing of how soil is tested for texture qualities in the laboratory of Leon Howard of College Station, Tex.

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### Fifth Session

## The Practical Side — From Wetting Agents to Mower Maintenance

James E. Reid, supt., Suburban CC, Baltimore, led off the Wednesday afternoon meeting with a talk on wetting agents. He was followed by James R. Watson, Jr., Toro agronomist, who spoke on water management. Morris E. Bloodworth of Texas A & M then discussed soil mixtures. After him came J. W. MacQueen, also of A & M, who pointed out some principles to be followed in landscaping. Purdy Carson of Jacobsen-Worthington, concluded the program with tips on equipment care.