species will develop under the ice, particularly if it is clear enough to permit the penetration of light. Presence of this algae is manifested not only in the samples taken by reservoir personnel, but also in phone calls to the water company by customers complaining of fishy odor and taste.

Treating large bodies of water after the formation of ice has always presented a problem, particularly if the current is insufficient to dispense adequately the necessary application of copper sulfate. A number of methods have been devised at reservoirs facing the problem.

Clarence H. Reed, Principal Sanitary Engineer, of the Boston system, relates that first treating attempts involved cutting holes through the ice in areas 25 foot square and pouring the copper sulfate solution into the holes. Since there was no appreciable current, the total solution (figured for each hole) had to be poured in three separate portions to prevent an overconcentration. With a 10 to 15 minute interval between each portion an excessive amount of time and labor was consumed treating a total lake area of 50-80 acres.

Fewer Ice Holes Needed

Experimentation led the engineers to evolve the system successfully used for a number of years; addition of an outboard motor to mix the copper sulfate solution with the water under the ice. It was observed through the clear ice that within a few seconds gas bubbles from the motor exhaust traveled over 100 feet in the current generated by the propeller. This meant the number of holes to be cut could be reduced substantially since the 25-foot-square areas previously required could now be increased to 100 to 150 feet.

The equipment used consists of an 18-hp outboard and a wooden frame 8 ft. long by 3 ft. wide using 3″ x 10″ planks for the sides and end. The motor is mounted on a 2″ plank in the center. The frame is provided with hand holds at the ends so it can easily be picked up with motor attached, set on sawhorses, and slid along the ice to the next hole.

Mr. Reed states that "If a large area is to be treated, several 50 gallon drums, or preferably wooden barrels, should be provided. About 25 lbs. of copper sulfate can be dissolved in a barrel of water by suspending coarse granular crystals near the surface of the water in the barrel. If there is some means of heating part of the water used, it

Hawaii Turfgrass Meet Success Assures '66 Version

An ideal place to hold a conference. These delegates prove it as they pose in casual dress for official photograph during University of Hawaii Turfgrass Management course.

Conference officials paused to check exhibits at Kuykendall Hall. Shown here are (from left): Major Robert J. Bohan, chairman; David A. Akana, County Extension Agent; Dr. Irwin Lane from the City and County Parks and Playgrounds Dept.; and William Y. Hayashi, Oahu Country Club superintendent.

Over 130 attended the First Annual University of Hawaii Turfgrass Management Conference, Aug. 26-27, held in cooperation with the College of Tropical Agriculture. Subjects were geared to discuss soils, fertilizers, weed control, and lawn insects. Exhibits, seen by more than 500, included species of various turf grasses, turf weeds, and turf equipment. On the Mall of the university campus were fertilization plots, and examples of nitrogen evaluation, aeration, verticutting, and topdressing. Several mainland delegates attended, including program speakers George Sandy of Los Angeles and William F. Bell, Pasadena, Calif. Details of next year's conference will be announced early in '66 through WTT.