sistant and grows so slowly it needs less mowing.

Another problem we experienced was acquiring sand to fill traps. The nearest suitable sand was 50 miles away along the Missouri River near Jefferson City, Mo. It took four months to complete trap construction and we hauled in 3,000-cubic yards of sand from the river. We used a small skid-loader to clean out the traps. By working an entire trap out from the inside, we avoided any damage to the fairways.

Because our course is bisected by a paved roadway (Missouri-HH), we had to construct a $35,000 tunnel under it for safe access to the 12th, 13th and 14th holes by our Cushman golf car fleet. The first step was to develop a detour. Then we build part of the 8 x 10-foot reinforced concrete tunnel before repaving the highway.

Building the course was a challenge, but Koplar Enterprises backed me with the best materials, equipment and personnel available to do the job. The course fulfilled a long-time dream by Harold Koplar, especially since Jones has termed it one of the best courses he has ever designed.

Gary Grigg, course superintendent at All Seasons Country Club golf course, checks on construction of a $35,000 tunnel under a roadway bi-secting the course.

Product Removes Thatch

A new material — called bio de-thatch — made up with micro-organisms and designed to eliminate thatch is now on the market.

It has been patented by Bio Dethatch of Louisville, Ky., and is being distributed by USS Agri-Chemicals. The product is immediately available. It has been and continues to be tested by a number of commercial and university groups.

President Julian Fortney heads the Bio-Dethatch enterprise and is working closely with USS Agri-Chemicals in getting the product introduced to the market. The marketing plans for this involve the entire USS Agri-Chemical distributor network.

Bio de-thatch is a dry-granular material that has been saturated with micro-organisms dried, pelleted, and crumbled which puts the micro-organisms into a dormant condition. When it is applied to the turf and is washed down to the soil surface or thatch build-up area it activates and feeds only on all forms of dead plant matter (plant residue) and digests the plant residue into humus (mulch) in the soil. Thatch is the accumulation of dead leaves, stems, clippings etc., that builds up between the soil surface and the green vegetation. It can be determined as to depth only by cutting a pie-shaped wedge or using a soil probe and measuring.

Morning dew is sufficient moisture to activate the micro-organisms in bio de-thatch and when activated the direct rays of the sun will deteriorate them so the watering is needed more to wash the material out of the sunlight than to activate the micro-organisms. However, during hot dry weather it is best to keep a good moisture level for approximately the first 48 hours after application because the material may dry out before it can fully activate. Once the thatch build-up area (referred to above) has been reduced sufficiently, the dry dead grass in the lawn will fall into the area where the thatch has been digested, and bio-degrade.

Best time to apply bio de-thatch is when the ground temperature is above 40° provided it is washed down to the soil surface when applied. The best time to apply is early in the spring or early in the fall because the moisture and temperature levels are the most favorable for good digestion in the shortest possible time. Bio de-thatch

like mold growing across a slice of bread is continuously growing and feeding on dead plant tissue in all levels of the soil profile. As it digests and converts the residue to mulch in the soil in one area, it then grows to another. Because of this, once fully activated (about 72 hours), the micro-organisms will grow in a warmer more moist area when the soil gets too cold or too dry close to the surface. Too much heat is not a problem. When the temperature is too low or the soil too dry the organisms go dormant and then will reactivate when the soil environment returns to a condition where they can again be active.

When bio de-thatch has overcome the thatch build-up, it is able to keep it under control at all times when an application is made once each year. It is applied at a rate of one pound per 1,000 square feet with a cyclone spreader. (For further information, circle (709) on the reply card.

BlueBird Names Distributor

BlueBird International, Englewood, Colo., manufacturer of BlueBird lawn combers, lifts and engine stands, announced the appointment of American Garden Western (formerly Western Seed) as distributor in Colorado and parts of Wyoming.

Doug Zehrung, BlueBird president, said that American Garden Western, headquartered in Denver, will market BlueBird lawn combers to all merchandisers of turf care equipment in its area, including lawn and garden stores, nurseries, professional turf care firms and hardware stores. American Garden Western is a subsidiary of American Garden Products Co. of Boston, Mass.

Turf, Ornamentals Session Highlighted at Conference

A session on ornamentals and turf will highlight the first day of the 1975 California Plant and Soil Conference, to be held at the Sheraton Inn, Anaheim, Calif., Jan. 29-31.

Lee Hermsmeier, USDA, will open the program with a discussion of his research on common lawn sprinkler performance. Dennis McLain, Hines Wholesale Nurseries, will outline irrigation practices used in the production of containerized nursery stock. His discussion will include techniques for injecting chemicals into the irrigation system. Dr. John Radewald, UC Riverside, will speak on nematodes and their effects on turfgrasses. Dick Maire, Los Angeles Co. Farm Advisor, will discuss a new technique for establishment of Monterey Pine from cuttings. Dr. Victor B. Youngner, UC Riverside, will present information on the effects of air pollution on turfgrasses. Dr. Scott Arnold, O. M. Scott Company, will give an overall view on what is presently known about Kentucky bluegrass problems caused by the disease Fusarium Roseum.

Leisur-AID Moves to Iowa

Leisur-AID, the lawn and garden distributing division of Aidex Corporation, has moved to its new headquarters in Council Bluffs, Iowa. The new facilities, consisting of five buildings on a 21-acre site, will consolidate various formulating, packaging and distribution entities of Aidex Corp.

Leisur-AID now has four dealer consultants calling on lawn and garden dealers and golf courses in Iowa, Nebraska and portions of surrounding states. A complete line of products for the dealer and chemicals for the golf course and grower are carried, according to a Leisur-AID spokesman.

Forest Service Directors Located at Field Stations

Three of five assistant directors for Forest Service research in the northeast are now stationed at field locations, closer to the programs they administer, the problems they must solve and the people they serve.

Under the old system, all five were located at Northeastern Forest Experiment Station headquarters in Upper Darby, Pa. The new organization gives each man jurisdiction over a specific geographic region. In addition, the Station has created a new position of deputy director. The changes were announced by Station Director F. Bryan Clark. The new arrangement will hopefully help Forest Service research to "be more effective in responding to the needs of forest users," said Clark.

R. Duane Lloyd has been named the first deputy director. Lloyd was director of Forest Recreation and Related Human Environment Research in Washington, D.C. before his move to Upper Darby.

Vets Home Superintendent Cited for Beautification

J. Paul Barefoot, superintendent of grounds maintenance and the Landscaping and Transportation Division of the United States Soldiers' and Airmen's Home in Washington, D.C., has received an honor award from the Beautification Division of the Department of Environmental Services.

Barefoot is responsible for maintenance and improvement of approximately 400 acres of grounds, roads and walks, a nine-hole golf course, 20,000 square feet of greenhouse, and transportation and fleet maintenance.

Having held this position for over 10 years, Barefoot said that beautification of the grounds is one of the more important jobs, since the Home is home for over 2,600 retired army and air force veterans. He said that an abundance of shade trees and flower beds plays an important role in the well-being of senior citizen residents.

Barefoot served as president of the Professional Grounds Management Society from 1971 to 1973, and is currently the president of the Mid-Atlantic Association of Golf Course Superintendents.