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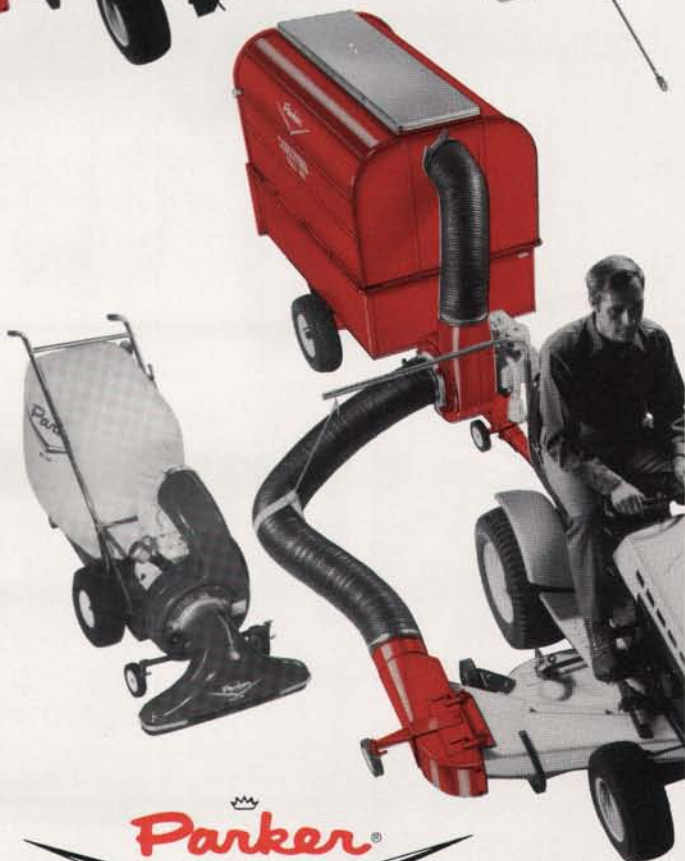
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When Turner Gibson spoke at the seminar the following year and heard Kajihiro describe chemigation as an important complement to granular chemical applications, he understood Newpher's interest. Together, with great apprehension, Newpher and Gibson decided to go ahead and install the pump and try chemigation. Kajihiro took soil samples, had them analyzed and put

together a program of fertilizers and micronutrients for the Braves.

"Instead of stacks of bagged fertilizer in our storage area, we now have just six 55-gallon drums of prescribed liquid fertilizer," Newpher boasts. The pump and injector was installed in the control room in less than one day with a double back-flow preventer. Newpher's apprehension quickly faded as the benefits of the system became apparent. The whole installation cost less than \$3,000.

"We discovered that the output of our irrigation system was greater than we thought," says Newpher. "We made the adjustment easily and found that all 17 stations distributed the nutrients satisfactorily without any evidence of overapplication. In fact, we were able to reduce irrigation frequency and cycles. Applications that used to take four men half a day could now be accomplished by one person at the controller in 15 minutes.

"We can now fertilize during a two-week homestead or anytime soil tests indicate it's needed. We solved a mid-season cutworm infestation through the system and used it to apply wetting agents twice a month last summer. Furthermore, we have not had a single disease outbreak since we started the chemigation program."

"The most dramatic results are seen with the iron treatment. Within six hours you can see a change in the color of the turf." Kajihiro recommended a 12-4-12 fertilizer with additional applications of ammonium nitrate when needed. "Our only problem has been an unusual, extended rainy period of a week where the fertilizer leached out of the root-zone. When the rain stopped we fed the turf back to acceptable levels."

The fertilizer is absorbed by both the leaf surface and the roots as it leaches into the root zone. "The parts per million applied through the irrigation system virtually eliminates the chance of burning the turf

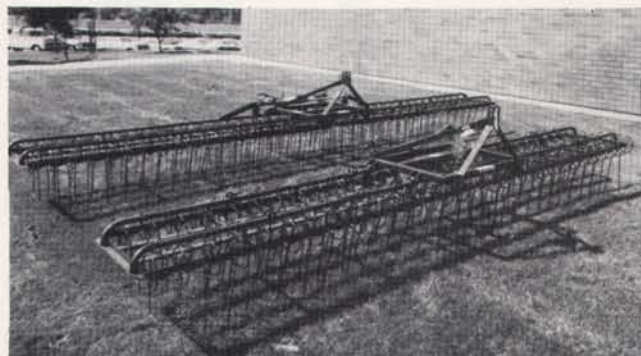
continued on page 24



The field is buried under mountains of dirt for more than a week while the annual Motocross event takes place.

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like a granular fertilizer might do on dew covered turf, Newpher states.

"With chemigation I can get the field up to a ten and keep it there," states Newpher. "With granulars I'd get the field to a ten and then watch it fall to a six before being able to make another fertilizer application."

"My original concern was in areas where three irrigation heads threw water. But, my

concern was unfounded since these areas look no different than those reached by a single head."

As baseball season ends, Newpher and the Braves' crew assist the Stadium Authority the turf maintenance tasks for the Falcons. During baseball season the field is cut with a Ransomes 213D, but the Falcons use a pull-behind reel gang during football season.

The Falcons do not want the field aerified as often as the Braves do. Prior to the

Falcons' opener, the field is overseeded with Pennant perennial ryegrass using a cyclone spreader pulled by a turf truckster. We go over the field after seeding with the reel gang so the rollers press the seed down for soil contact. "The finer blade and darker color of Pennant from Sunbelt Seed, a division of STN, is preferable to annual ryegrass," says Newpher.

Newpher uses a motorized sand trap rake to groom the base paths. He is careful not to leave the tarp on the field. "The tarp acts like an oven and bakes the 50:50 clay/sand base path mix into a brick-hard surface. By pulling the tarp up quickly after rains and using the trap rake to cultivate the base paths we cut down on base path maintenance."

"Our field cover is ten-ounce vinyl and usually holds up well for three seasons. It weighs 2,700 lbs. dry, but the wet weight is considerably greater."

Newpher and Gray were quite impressed with the Sports Turf Manager's Association sessions during the recent Golf Course Superintendents Association of America Show in San Francisco. "I've never seen so many experts in one place at one time helping sports turf managers," Newpher exclaims. "But the best part was being able to talk to other major league turf managers. When I returned from the conference I spoke with the Braves' management about encouraging our minor league turf managers to join STMA."



The day after Motocross ends, the mountains of dirt are hauled away and the field is prepared for sodding. Opening day is less than five weeks away.

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## OLD RIVERBED CONVERTED TO SPORTS COMPLEX



The alkaline riverbed soil was amended with 650 yards of organic compost. Sulfur-pelletized gypsum was applied before seeding with Kentucky bluegrass and fescue.

When Edward Murdock, park supervisor for Livermore, CA, heard land had been donated to the city for softball and soccer fields, he was thrilled—until he visited the site and discovered it was an old riverbed with hardly any topsoil, just silt and gravel.

Soil tests revealed the river bottom was a silty clay loam soil consisting of 14.8 percent sand, 46 percent silt and 39.2 percent clay. Deficient in almost every nutrient, the soil was practically devoid of organic matter. The pH was an alkaline 8.4, unsuitable for maintaining healthy turf.

Murdock knew he had a big job of soil amendment ahead of him to make the fields a reality. Two fast-pitch softball fields and three soccer fields were at stake.

Forty miles east of Oakland, Murdock thought the Oakland A's might have a few tips for him to follow. He discovered that Shelton Nursery Supply in San Jose supplied the team with a natural recycled compost called Compgro. The weed-free mixture of organic solids and fir bark chips is composted into a finely textured product by the East Bay Municipal Utility District. Murdock saw a number of solutions to his predicament in the product, since it was a source of organic material as well as nitrogen, phosphorus, potassium, magnesium and zinc.

"The normal choice would have been mushroom compost," said Murdock, "but, I was worried about salinity and inconsistency often found with mushroom compost. The two things I liked best about Compgro were the fact that it is weed-free from composting and most of the nitrogen is insoluble and releases slowly."

At six cubic yards per 1,000 square feet, Murdock needed 650 yards to amend the soil for the fields. Before the compost was delivered, Murdock's crew installed an automatic irrigation system—a "must" in the hot, arid inland valley.

As the truck drivers dumped their loads

of compost, operators of front-loading tractors went to work spreading it over the site. Tractor-mounted tillers mixed the compost into the silty river bottom soil. After grading, sulfur-pelletized gypsum was spread over the seedbed to help leach out the salts and to lower the pH. The fields were seeded with a mixture of Kentucky bluegrass and fescue called Coliseum.

Livermore softball leagues will play their games this spring on two new diamonds and Murdock can devote his attention on the soccer fields.

## BEMAN TO ACCEPT DONALD ROSS AWARD



The commissioner of the Professional Golf Association Tour, Deane Beman, has been named the 1986 recipient of the Donald Ross Award by the American Society of Golf Course Architects. Beman, who has served as commissioner since 1974, will be honored at the Ross Awards Banquet to be held at the Tournament Players Club in Ponte Vedra, FL, on March 10.

Beman was selected for raising the awareness level of golf course architects. ASGCA president John Watson notes that Be-

man "has been instrumental in encouraging architects to consider the spectator in designing courses for large tournaments, such as the new Tournament Player Club courses across the country, and this has helped attract more golfers to the game in recent years." The TPC courses are the principal users of "Stadium Golf" architecture around key greens.

Prior to his appointment as commissioner, Beman was a touring pro, winning four major tournaments. He distinguished himself as an amateur, winning the 1959 British Amateur and the U.S. Amateur titles in 1960 and 1963. He was a member of the America's Cup, Walker Cup and World Cup teams.

The award is being presented during ASGCA's annual meeting.

## CAL POLY INSTITUTE LIMITED TO 500

The largest pure athletic field conference in the U.S., the Sports Turf Institute at California Polytechnic University-Pomona, is forced to limit registration to 500 sports turf managers during its Third Annual Institute, March 27. This has not diminished the quality of the program, however, and all interested persons should contact Cal Poly immediately.

Dr. Kent Kurtz, Cal Poly professor of horticulture and organizer of the Institute, spent last year on sabbatical travelling much of the U.S. and part of Europe visiting sports facilities. He has incorporated some of his experiences and contacts from his travels into this year's program.

National experts speaking at the Institute include Jim Kelsey, president of Partac Peat, a leader in topdressing and basepath mixes; Dr. William Daniel, co-inventor of the Prescription Athletic Turf (PAT) system; Dr. Jim Watson, vice president of The Toro Company and world traveller; David Heis, president of Turf Services, Inc., and expert on sand slitting for drainage; and Steve Wightman, grounds manager for Denver's Mile High Stadium and president of the Sports Turf Managers' Association.

California sports turf experts speaking include Dr. Vic Gibeault from the University of California, Riverside; Brian Bossard, field manager for San Diego Stadium; Barney Barron, superintendent of the San Francisco Parks Department, which manages Candlestick Stadium; Los Angeles Raiders field manager Ken Irons; Steve Cockerham of the University of California, Riverside; and Rex Baker and Mark Hodnick from Cal Poly, Pomona.

All sessions are divided into basic and advanced sports turf management. Lunch is provided. The afternoon features an indoor and outdoor trade show of sports turf products.

Interested persons should contact Dr. Kurtz immediately at (714) 869-2176, or write

the Sports Turf Institute, Cal Poly University, 3801 W. Temple Ave., Pomona, CA 91768. A nominal charge of \$25 is asked. STMA members receive a \$5 discount.

## AUGUSTIN LEAVES FLORIDA FOR LESCO TECH JOB

Dr. Bruce Augustin, extension turf and water specialist for the past six years at the University of Florida, Gainesville, has joined Lesco in Rocky River, OH, as director of technical support.

Augustin, who holds a doctorate in turf

physiology from Ohio State University, will train Lesco's field sales force, coordinate the company's research program at various universities, assist in development of new products and conduct customer seminars. Much of Augustin's research in Florida concerned water and energy conservation in landscape maintenance. He received a masters degree in seed production from the University of Idaho. He is very familiar with both cool and warm season turfgrasses.

Augustin is assuming some of the duties previously handled by Art Wick who was recently promoted to vice president of technical services. His employment coincides with Lesco's new addition of trucks in California and warehouses in Florida.

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# Getting Serious About Annual Bluegrass

Golf course superintendents in Idaho are starting to get serious about annual bluegrass (*Poa annua*) in their Kentucky bluegrass fairways. A few superintendents, with the encouragement of Washington State agronomist Roy Goss and Oregon State University agronomist Tom Cook, are adjusting their irrigation and fertilizer programs to discourage the outcast of the bluegrass family.

Bob Lee, superintendent at Stoneridge Golf Course near Blanchard, OR, is one of those superintendents whose fairways used to be 60 percent *Poa*. Today those same fairways are 90 percent Kentucky bluegrass. Lee is not alone. He credits much of his early success to fellow superintendents Thomas Wolff at Monito Golf and Country Club, Spokane, WA; Roland "Bud" Ashworth at Liberty Lake Golf Course, Liberty Lake, WA; and Dick Gilfoil at Hayden Lake Golf and Country Club, Hayden Lake, ID.

"They helped give me the confidence to make the changes," says Lee, "particularly cutting back on water. Now I'm putting on less water than anyone, and I've been able to practically eliminate *Poa* from this course."

Even though his Idaho location provides him with an excess of available water, Lee is cutting back. "When fairways and greens are overwatered, *Poa* thrives," he states. "It's easy to run up a \$5,000 yearly bill just to treat for *Fusarium* patch disease. The lush turf also encourages *Typhula* snow mold disease and, of course, winter desiccation."

Less water is only part of his *Poa* reduction program. Applications of endothall and judicious use of fertilizers and sulfur have enabled him to develop his bluegrass fairways and Pennncross bentgrass greens. His greens are now 99 percent Pennncross and all fairways are at least 90 percent Kentucky bluegrass.

"Golfers favor playability of a course over aesthetics. Most golfers are more interested in how the course plays than how it looks," Lee claims. "I notice stress before the golfers do. Therefore, I irrigate only when the fairways show the first signs of stress. This keeps annual bluegrass from coming back to compete with the perennial grasses. We irrigate greens only at seven to ten day intervals. At times, we can go a full week before moving the cups because the greens are able to withstand more traffic."

Lee says the overall result is reduced maintenance, including less fertilizer. "Our annual budget for fertilizer on this 18-hole course is only about \$7,000, half that of some Northwest courses. We reinvest some of the savings into a higher quality slow-release fertilizer. We use isobutylidene diurea (Estech's Par Ex IBDU) which is a slow-release, 31 percent nitrogen fertilizer. We can fertilize and irrigate and the nitrogen doesn't over-release in the turf. Since it is not temperature dependent, it works well with our great temperature extremes in Idaho."

Greens are fertilized in the spring with one pound of 25-0-8 per 1,000 square feet (containing IBDU) along with some ammonium

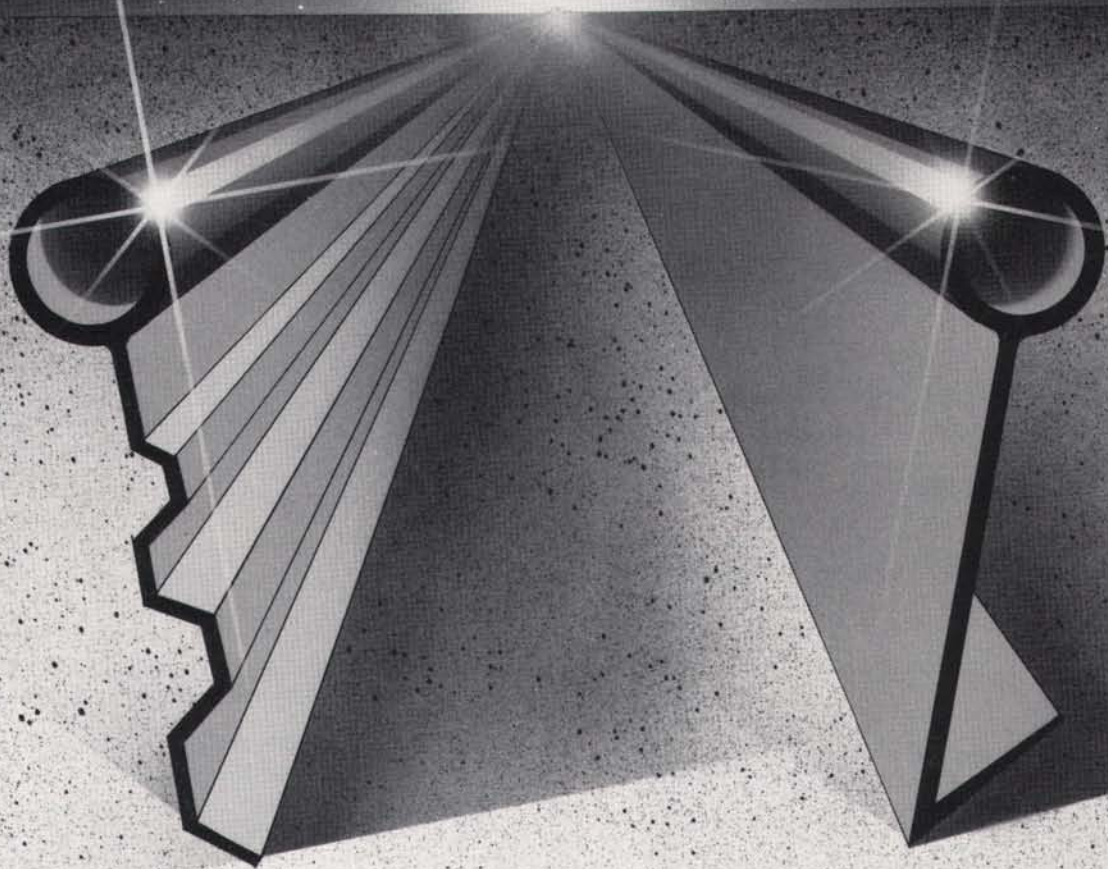
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Bob Lee checks the greens at Stoneridge Golf Course with a soil probe before irrigating to avoid damp conditions which encourage annual bluegrass.



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sulfate to speed early growth. "We'll also use some water soluble pharmaceutical grade fertilizer and chelated iron," says Lee. "Then we come back twice later in the season with IBDU along with sulfur."

Fairways are fertilized in spring and fall with one pound per 1,000 square feet. "Lately, most of the fairways really don't need a fall application judging from appearance," Lee states. "The reason we make the second application is to have the nitrogen available during the cool fall weather when the bluegrass plant continues important root growth. This helps turf withstand high temperatures the following summer when Poa is weakest. The fall-applied nitrogen is also there is the spring for early greenup."

With less water and fertilizer, you'd think Lee would be lucky to keep the course appearing as lush as it did before. The fact is it plays better. "The ball sits up on our bluegrass fairways, cut at one inch, almost as if it's on a tee," boasts Lee. Greens are cut as low as 3/32-inch. Balls roll true on the dense Penncross. The system, in Lee's opinion, constitutes good management."

Dr. Ross agrees and credits Lee with "some of the finest bentgrass greens in the entire Pacific Northwest." Goss repeatedly cautions superintendents against permitting *Poa annua* to dominate golf turf. Over-irrigation and high phosphate fertilizer are the two key causes of *Poa* infestations,

Goss states.

During a check of root systems on Stoneridge Golf Course's greens the day before a field day last summer, Goss discovered 12-inch root systems—attesting to the workability of Lee's system.

Goss states that *Poa annua* requires two to three times as many fungicide treatments as Kentucky bluegrass to control diseases. Annual bluegrass requires fungicide treatments almost year round. Susceptibility to diseases, winter kill and heat stress make management of *Poa* much more difficult than other turfgrasses.

By contrast, Kentucky bluegrass fairways offer superior beauty and playability; they also need less maintenance, less water and few, if any, fungicide treatments. Lee helps the Kentucky bluegrass resist disease with applications of sulfur and potassium.

Thatch, also the result of overfertilization and overwatering, has been another target for Lee. When he started as superintendent at Stoneridge six years ago, thatch was two or more inches deep over the entire course. "We aerated the fairways four times the first season and twice every year since. We verticut greens every three to four weeks and topdress them with sand every two weeks. The slow-release of the IBDU helps avoid lush growth and thatch buildup.

Lee's responsibility extends to the resort and condominiums around the course. "In my six years as superintendent, we have planted 3,000 new trees on the course and

resort grounds," Lee points out. "In 1985, we planted more than 250 flats of flowers throughout the 1,100-acre condo community."

A great part of Lee's confidence and knowledge comes from experience and talking with others. Since his father was a developer who built golf courses, such as Sudden Valley Golf Course in Bellingham, WA, Lee could have skipped much of the golf crew internship after he finished his college degree. Instead, he chose to start as a golf course mechanic, switched to landscape contracting, and then did stints in a chemical warehouse, housing construction, drainage installation, and maintenance assistance at a ski resort. All this was in addition to three summers on a golf course crew.

Six months after Lee started at Stoneridge, he became superintendent. He immediately became active in the Inland Empire Golf Course Superintendents Association, the Northwest Turfgrass Association and the Golf Course Superintendents Association of America. "It's my goal to become a certified golf course superintendent next year," says Lee.

The reason Lee meets his fellow superintendents so often is because his active association membership and a one-day-per-week job of selling chemicals and seed. Lee's territory includes Spokane and Coeur d'Alene. "I never visit a golf course where I don't learn something," he points out. "It's a great way to see lots of friends and share experiences in golf course management."

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