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FRONT COVER:

Verticutting at Anaheim Hills Public Country Club, an 18-hole course owned by the City of Anaheim, Calif. Superintendent there is Neal E. Beeson.

VOLUME 53 NUMBER 3

News Δ 6 Clippings **FEATURES** Verticutting produces smoother, healthier turf Dr. Fred Grau, one of the developers of the process and the machinery many years ago, tells what 9 verticutting is and how it can improve the turf on your golf course Six superintendents discuss the golf business GOLF BUSINESS invited six superintendents to a roundtable disucssion during the recent GCSAA 14 conference to discuss the golf business today and where it may go tomorrow Southwestern states show variety of maintenance problems NGF Regional Director David Hueber outlines the growth of golf in the southwest and exposes the wide variety of problems superintendents there have to deal with 21 Golf car battery specifications GOLF BUSINESS solicited specifications of their batteries from all of the major manufacturers. They are presented here in easy-to-read chart form for you to compare 26 Products 27 Product literature 29 Classified 32

Viewpoint

Member:





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CONVENTIONS

GCSAA: sand greens draw biggest crowds

Just as at many regional turf conferences in the past few months, construction and topdressing of greens with sand created the most interest on the part of superintendents attending the 50th International Turfgrass Conference and Show in Atlanta last month. Walls of large meeting rooms were literally lined with standing conference attendees.

The staff of the sponsoring Golf Course Superintendents Association of America this year provided all the elements of a successful convention: the Georgia World Congress Center, more than 200 exhibitors and 6,500 registrants, and a program of educational sessions keynoted by a strong motivational speech.

In an effort to respond to criticism of programs at previous years' conferences, GCSAA Director of Education Palmer Maples and his aides created a diversified program with greater participation by superintendents. There were turf management sessions divided into "north" and "south" groups, a morning of research reports, labor management topics, a morning for public course management, and the especially popular sand green greens and has reduced application of fungicides because of his topdressing program. He said that "if your greens are healthy, there's no need to start sand topdressing," but that "it is a solution to many maintenance problems."

George Burgin of Atlanta Country Club in Marietta, Ga., started topdressing with sand to correct compaction problems and to reduce aerification from five times per year. He stopped using sand when he noticed while cutting cups that the root system on his greens extended only into the sand layer. Burgin told the audience, "Sand topdressing may be a good program under poor soil conditions, but don't do it unless it's necessary. Be very cautious." Reduced *Poa annua*

population was one benefit of sand topdressing discovered by Charles Nolan of Inglewood Golf and Country Club, Kenmore, Wash. Nolan's greens were constructed in 1918 of organic soils and were never tiled; they are now a 50/50 mixture of Poa and bent, and "you can't tell the bent from the Poa they both stand up," Nolan said. He has adapted a topdresser so that a three-man crew can topdress all 20 greens in one morning.

How to live with rising water costs and drought was discussed by Jim Prusa of Pasatiempo Golf Club, Santa Cruz, Calif. Deciding where not to irrigate because of rationing, guarding against unscrupulous well drilling companies, and handling monthly water bills of \$12,000 for irrigation are just three of the reasons Prusa has been forced to make sacrifices at Pasatiempo.



sessions.

After James Fitzroy, CGCS, superintendent at the Wollaston Recreational Facility in N. Quincy, Mass., filled the meeting room to overflowing relating his success with green construction using sand as the topmix, three other superintendents discussed their experiences with sand topdressing.

Ray Knapp of Tuckaway Country Club in Franklin, Wis., found regular light topdressing with sand provides a considerable amount of sand over a year's time and eliminates thatch problems. He has virtually stopped aerification of LEFT TO RIGHT: Knapp, Burgin, and Nolan — two "aye's" and one "nay" for sand topdressing.

To compensate for the cutback in water usage, Prusa has increased aerification, sand topdressing of greens, mowing heights, hand watering, efficiency of irrigation, use of native plants in the landscape, and use of drip irrigation. His biggest move was to arrange use of effluent water under a publicly funded project. Not only will the state and federal government pay most of the installation cost, but the club's water rate will be reduced by two thirds.

Paying \$42,000 per year for water is one big reason why Elmer Border, CGCS, El Caballero



ABOVE: Diesel power was in the forefront of GCSAA exhibits as several manufacturers introduced new tractors. BELOW: Recognizing superintendents' growing influence in golf car operations, virtually every major golf car company exhibited at GCSAA.



Country Club, Canoga Park, Calif., is concerned with making room for more golfers on his course. "We need more golfers for economic survival. We're being priced out of business," he said.

A superintendent since 1926, Border has helped his club initiate a number of new procedures to speed play and get more golfers through the course: playing fivesomes on weekends or whenever the course gets crowded, using 90 electric golf cars, installing permanent 150-yard markers, putting markers on the flagpoles to indicate pin position on the green, and asking golfers to putt continuously and to forget "honors" on teeing off.

Charles Tadge, CGCS, Mayfield Country Club, South Euclid, Ohio, was elected GCSAA president at the annual business meeting. Melvin Lucas, CGCS, Piping Rock Club, Long Island, N.Y., is the new vice president. Elected to 3-year directors' terms were Michael Bavier, CGCS, Inverness Golf Club, Palatine, III., and Edward Dembnicki, Arcadian Shores Golf Club, Myrtle Beach, S.C.

SEED

Salt-tolerant variety found on golf course

A new turf variety that thrives on soils with a pH as high as 8.5 was discovered on the fairways at Boulder Country Club in Colorado.

The variety — "Fults" *Puccinellia distans* — is intended initially for use along highways rights-of-way, but there are also plans to market it for golf course use.

Northrup King Co., Minneapolis, presently has production and marketing rights. The company is contemplating seeking Plant Variety Protection under federal law.

Fults was discovered by Stan Metsker, then superintendent at the Boulder golf course. He noticed patches of grass growing in salty areas of the fairways. Professor Jesse Fults of the Colorado State University Weed Research Lab identified the grass as *Puccinellia distans*. He was responsible for the initial collecting, purification, and seed increase of the variety and is the person for whom the grass was ultimately named.

According to Larry Vetter, manager of the Professional Turf Products Div. for Northrup King, seed mixture formulas for fine turf use can include Kentucky bluegrass, fine-leaved perennial ryegrasses, and/or fine fescues such as the salt-tolerant Dawson red fescue, in addition to Fults.

He said that a combination of these species will provide quick cover, goof turf quality, and longterm persistence. It can also be seeded with bentgrass. It is expected to have uses on golf courses in areas where irrigation water is highly alkaline.

Fults is a low-growing bunch grass. Maximum unmown height, inclusive of seed heads, is between 12 and 16 inches. Foliage height ranges from 4 to 8 inches. It can be maintained at a mown height of between ½ and 2 inches. Plants are leafy and the leaves narrow. The color is dark green, which tends to darken on alkaline soils.

Optimum soil pH level for most grasses is between 6.5 and 7.0

HERBICIDES

Rhone-Poulenc Inc. alters Chipco label

A label change in Rhone-Poulenc Inc.'s Chipco Ronstar G herbicide should help golf course superintendents control *Poa annua*, according to a spokesman from the company's Agricultural Division.

The herbicide, currently being manufactured in a new larger granule size, may now be applied in the late summer or early fall for pre-emergent control of *Poa annua.* "Expansion of our label should enable turf managers to regain control of *Poa annua,*" the spokesman said.

In addition, the company announced that the herbicide may now be used to control weeds on established perennial ryegrass and St. Augustinegrass. Previously, the label covered only bermudagrass and bluegrass.

Further, the application rate of the herbicide for goosegrass and crabgrass control has been reduced to 2 to 4 pounds active ingredient per acre or 100 to 200 pounds of formulated material per acre. The prior rate had been 4 pounds active ingredient or 200 pounds of formulated material per acre. ASSOCIATIONS

Ohio course owners form new group

Like the phoenix, a mythological bird which rose renewed from its own ashes, the Ohio Association of Public Golf Courses has been formed from what had been the Outdoor Recreation Association in that state.

The new name and a new set of bylaws were approved at a meeting on January 16. Elected president of the new association was Keith Maffit, president and major shareholder of Briarwood Golf Club, Broadview Hts.; Dean West, . owner of Wests Mogodore Country Club, is secretary/treasurer.

The association divides the state into nine sections, each of which will elect a representative to the OAPGC board of directors. Elected thus far as directors are Don Likes, Kingswood Golf Club, Mason; Bill George, Valley View Golf Club, Lancaster; Ken Snode, Tannenhauf Country Club, Alliance; Tom Patterson, Orchard Hills Country Club, Chesterland; Larry Shute, Bluffton Golf Club; and Dean Peterson,

Avalon Golf Club, Youngstown. The former Outdoor Recreation Association was founded in 1965 by a group of Ohio golf course owners. It had 100 member courses in its first year, according to Sil Monday, executive director for the ORA's 14 years of existence, although the membership fell off in recent years. Only 25 courses were active members in 1978.

During Monday's tenure as executive director, he worked diligently campaigning for public issues beneficial to golf courses in the state, such as Daylight Savings Time and getting green belt legislation on the ballot.

Dues in the new organization will be \$30 per year for privately owned public golf courses, but there will also be an associate membership category for suppliers and others affiliated with the golf business in Ohio.

Interested public courses in Ohio can contact Keith Maffit at Briarwood GC, 2737 Edgerton Rd., Broadview Hts., OH 44147.

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Brief bits of news from in and around the golf business. . .

A number of new courses across the United States are currently under construction or have been tentatively approved. The Development Corporation of America, Hollywood, Fla., has begun construction of a luxury golf community in Boca Raton, Fla. Boca Greens, a single-familly community, will contain about 1,000 homes priced from \$85,000 to \$110, built around an 18-hole golf course.

The course and clubhouse is being developed by William S. Roach, who has designed a number of clubs including Mill River Club in Palm Beach, Fla., and the Old Westbury Country Club on Long Island, N.Y. Roach is a past president of the National Golf Club Owners Association.

The course is being designed by architect Joe Lee, Boynton Beach, Fla., who has designed more than 200 courses including the three Disney World courses in Orlando

Jack Nicklaus reportedly may design an 18-hole championship golf course in Douglas County, Colo, Nicklaus and Jack Vickers III, son of Denver oil magnate Jack A. Vickers, jointly own about 1,860 acres of land in Douglas County on which they plan to build a golf course, swim and tennis club, and residential community. Construction is scheduled to begin in June.

A city-operated 9-hole golf course in McCook, Neb, could become a reality if the McCook City Council votes to approve an agreement between the city and the city's Elks Club.

Money for construction of the proposed course will come primarily from the Elks Club (\$125,000) and a federal grant from the Bureau of Outdoor Recreation (\$200,000).

Construction of Bear's Paw Country Club, a condominium community and 18hole golf course in Naples, Fla., began in February and is scheduled to be completed by the end of the year.

Nick Kenezevich, general manager of J.R. Murphy Enterprises, the company developing the project, said plans call for that course also to be designed by Jack Nicklaus.

Freeman, Penrose & Kajimura, Ltd., Honolulu, Hawaii, recently purchased the 310-acre Country Club of Sarasota, a \$13 million residential and golf course development south of Sarasota, Fla. Peter Tucker, vice president of the firm, has assumed active management of the club and will also surpervise Torrey Homes, Inc., the home-building subsidiary of the club.

The winter months have not only been a time of rapid golf course construction, but also a time for many supreintendents to change jobs. John E. Laake, formerly a superintendent at Crest Hills Country Club, Cincinnati, was named superintendent of Columbus (Ohio) Country Club. Terry Wulf, formerly an assistant at Westwood Country

Club, Rocky River, Ohio, was named superintendent at Sweetbriar Golf Club, Avon Lake, Ohio,

Michael Lombardi, a graduate of Providence College, Providence, R.I., has been named operations manager of Cranston Country Club, Cranston, R.I.

Century Rain-Aid, Madison Heights, Mich., recently named Ben Taliaferro, a 17year veteran of the industry, executive vicepresident. They also appointed Paul R. Sowerby, previously a production control analyst for the Ford Motor Co., inventory manager.

Further, Rain-Aid opened a new branch in Clearwater, Fla. Bob Elliott, a University of Massachusetts graduate and former golf course superintendent, and Nancy Elliott, a former administrator with Federal Supply, Inc., Clearwater, Fla., will manage the branch.



Elliott & Elliott

Lombardi

A number of golf course superintendents' associations recently elected new officers. The **Central Pennsylvania Golf Course** Superintendents Association named Cameron Henderson, Berkshire Country Club, Easton, president; Jim MacLaren, Lebanon Country Club, Lebanon, vice-president; and Charles Cadiz, Kimberton Golf Course, Phoenixville, secretary-treasurer. Kenneth Keller, Country Club of Harrisburg, and Terry Wueschinski, York Country Club, were named directors

The Greater Cincinnati Golf Course Superintendents Association named its new board of directors. They are James Glazer, Cincinnati Country Club; John Fanning, Terrace Park Country Club, Milford; Terry Frey, Becket Ridge Country Club, Westchester; Mike O'Connell, Maketewah Country Club, Cincinnati; and John Hamilton, Jack Nicklaus Golf Center, Cincinnati.

The Illinois Turfgrass Foundation recently elected Al Herbster, of the University of Chicago, president, and Tom VanDeWalle, Short Hills Country Club, East Moline, vicepresident.

The American Society of Golf Course Architects will hold their 33rd Annual meeting March 11-16 at the Pinehurst Hotel, Pinehurst, N.C. Activities will include a special awards banquet, panel discussions, and professional development seminars. The society will also present a permanent exhibit on golf course architecture to the World Golf Hall of Fame at a special reception.

The Nevada Recreation and Park Society Annual Conference will be held March 29-31 at the Aladdin Hotel, Las Vegas. For further information contact Dave Morby, Director of Parks and Recreation, P.O. Box 4086, North Las Vegas, NV 89030.

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Verticutting produces smoother, healthier turf

by Dr. Fred V. Grau

A long time ago, when I was extension agronomist at Penn State, I used to visit the late Jim Morrison at Hershey Country Club. Jim had rigged up an altered rotary hoe by replacing the toothed rotors with sharpened rolling coulters. The two sections were out of register so that the space between cuts was about 2 inches. The idea was to cut the stems of crabgrass vertically (upright). The stems hugged the soil and thus escaped the fairway mowers, which cut horizontally (flat). By pulling the vertical cutter in two directions most of the crabgrass stems were severed. A chain-link fence drag did a good job of loosening them so that the fairway mowers pulverized them.

Sometime later, when I was director of the Green Section, I visited James Hamner at the Memphis Country Club. Jim had the same idea, only he modified a Brillion seeder by substituting sharpened cotton gin saws in two ranks, out of register. This tool was pulled with a tractor over the fair-





ways and roughs to cut the flat-lying stems of Dallisgrass. Like Jim Morrison's design, it worked.

In my pocket I always carried a sharp long-bladed knife for cutting plugs from greens. One evening I was digging clumps of goosegrass from our front lawn in College Park when it occured to me to pull the sharp blade across the flat stems of the weed. With only minimal pressure the stems were

After becoming the first turf extension specialist in the U.S. at Penn State in 1935, Dr. Fred Grau served as director of the USGA Green Section. He discovered Penngift crownvetch and helped develop Merion Kentucky bluegrass, Meyer zoysiagrass, and Penncross bent. He has been president of the Musser International Turfgrass Foundation since its inception in 1969. severed from the crown. By doing this in two directions there was left alive only a stub (the crown). By this time I had been working with Tom Mascaro and his brother Tony in developing the aerifier. It was only natural to discuss other ideas with them. The obvious happened. They put together a machine that they dubbed "The Verticut," a mower that cut on a vertical plane. It was a sensation almost overnight.

How does it work? A horizontal spinning shaft, adjustable for depth, has steel blades mounted on the shaft. As these whirling blades make contact with the turf they cut all stems that tend to lie flat out of the reach of conventional reel or rotary mowers. By lowering the blade unit it is possible to Vertical cutting blades can be seen underneath the verticutting machine at left. Effect of verticutting on turf is shown above.

make contact with soil and actually do a good controlled job of removing thatch. This is a drastic operation to be approached cautiously.

What does verticutting actually do? It smooths the surface! Most grass turf is composed of plants that are not identical in growth rate. Those that grow faster or more upright create an uneven surface, that can be described as "bumpy," especially for putting. This is particularly true when there are plants of Poa annua present. The vertical mower removes the objectionable faster-growing blades of grass and leaves a smooth uniform surface. It is complementary to the conventional horizontal cut of the reel mower which, following the vertical mower, removes the trash left on the surface.

More than smoothing bumpy turf, vertical mowing actually helps turf to be healthier. As grass blades grow older they become more susceptible to



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Jim Morrison of Hershey (Pa.) CC created this forerunner of today's verticutting machines about 40 years ago.

diseases. Fresh new grass blades are remarkably resistant to diseases. "luvenility" is a word coined to describe the state of keeping turf young and fresh by continually removing the older stems and leaves. The better turfgrasses tend to be decumbent, which means that the blades tend to lie in a position parallel to the soil surface. In this position they are cut imperfectly by reel mowers. As they grow older they become more susceptible to disease and become thatch producers. It is safe to say that the process of verticutting has been the most important mechanical factor ever produced for keeping turf healthy with fewer chemical treatments. It is a "rejuvenator."

Thatch, the bane of good turf, has less chance to develop when verticutting is done regularly. The material that helps to produce thatch is loosened and removed before it becomes a liability. Thatch limits the effectiveness of many insecticides used to control soil-inhabiting insects. This is another reason to employ regular verticutting in the production of quality turf.

Many weeds can be controlled mechanically to a large extent by verticutting. Patches of clover actually seem to disappear. But, quality turf rarely has weed problems since highly-effective chemical control nips them in the bud. A more practical use of verticutting occurs when a stoloniferous turf is treated rather deeply. The loose material which contains many stems with joints is swept up and used effectively as planting material. I've seen this done with bentgrasses, bermudagrasses, and zoysiagrass. The operation leaves the playing surface improved and the excess material becomes an asset instead of a liability.

The practicality and effectiveness

of verticutting becomes clear when one considers that most major mower manufacturers have produced interchangeable units that replace the reel mowing units. This has greatly extended the usefulness of power mowers, especially those used on putting greens and tees.

Many of us remember complaints about "grain" on putting greens. These days one hears only an occasional statement by a TV commentator about "the grain seems to run toward the ocean" or some such remark. It is rare that "grain" creates difficulties in putting. This is due in part to superior grasses such as Penncross and also to improved maintenance practices including verticutting on a regular schedule. Few will remember "Virginia bent" of 50 years ago, but it was renowned for its unmanageable grain. Thank goodness it has been replaced by superior grasses.

Summary

Verticutting, virtually unknown 30 years ago, today is an indispensable factor in the production of superior turf. It smooths "bumpy" turf and helps to produce uniform, true putting surfaces. Weeds are virtually destroyed, and surface stems and runners are eliminated. Thatch is reduced significantly. The older disease-prone grass blades are removed, thus making room for the young shoots that are highly resistant to diseases. Stems with joints that are removed from desirable grasses become an asset for establishing new plantings, rather than a liability for disposal. "Grain" that interferes with accurate putting virtually is eliminated under a system of regular verticutting. When all the pluses are added up, it is safe to say that verticutting is here to stay.