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# FOLIAN® complete liquid fertilizer.

jobs in the second cutback by Toro. The company did not pay a dividend in the last quarter.

Cantu, formerly president of the ProTurf Division of O.M. Scott and Sons, is a warm, personable man with more than ten years experience in the turf industry.

Toro was an impressive, growth oriented firm until recession and lack of snowfall cut earnings. Between 1976 and 1979, Toro's sales increased from \$130 million to nearly \$360 million. In 1980, sales still increased to \$402 million.

Toro Chairman David McLaughlin has been considered one of the most dynamic business leaders in the country and has received considerable coverage by the business press in the last three years. McLaughlin said the company will take a more conservative growth strategy in the future.

Dartmouth's search has taken more than nine months and included 400 candidates. McLaughlin assumes his new post in June 1981. He missed the announcement of his new job in New Hampshire so that he could personally explain to the Toro board his move.

McLaughlin announced to the Board of Directors in late February that he has accepted the post of president of Dartmouth College, Hanover, NH. McLaughlin, a 1954 graduate of Dartmouth, has long been active on the college's board of trustees and served as chairman.

CORPORATE

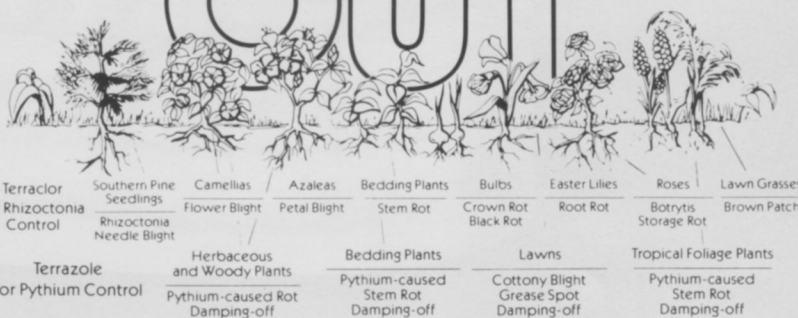
**Melrose, Keating assume reigns after Toro shakeup**

The Toro Company, faced with a total management restructuring after the departure of David McLaughlin and Jack Cantu, has selected ten-year Toro veteran Ken Melrose, 40, as president. Stephen Keating, 62, former chairman of Honeywell and director of General Mills, PPG Industries, and Donaldson Co., will serve as chairman of Toro's executive committee.

Melrose replaces Jack Cantu as president. He was most recently executive vice president of Toro's equipment division. He joined Toro in 1970 as director of marketing and served as president of Game Time, a Toro subsidiary for three years. Melrose graduated from Princeton University in mathematics and electrical engineering. He

*Continues on page 57*

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New Toro President Kendrick Melrose

received a master of science from Massachusetts Institute of Technology and a master in business administration from Chicago University.

Melrose was a track letterman at Princeton and has been a very active supporter of The Children's Theatre Company.

Keating has been a member of the Toro board of directors since 1966. Other credits include chairmanship of the Federal Reserve Bank of Minneapolis and a board member of the Mayo Foundation.

### TURF Athletic field needs debated at Nebraska

Coaches, field managers, and turf specialists weighed natural and artificial alternatives for athletic fields during the Nebraska Turfgrass Conference and Show, Jan. 12-14, in Omaha.

Concerned that many Nebraska high schools are signing orders for artificial surfaces, turfgrass specialists urged field managers to review their natural turf programs for improvement.

John Melton, assistant coach of the Nebraska Cornhuskers football team, told conference attendants that players must wear pads everywhere, withstand the pounding from falling on the hard artificial surfaces, and take the impact that natural turf would absorb on knees and ankles. Melton said, however, that it's easier to coach on artificial surfaces, these fields can be used more intensively, and aren't turned to soup in heavy rains. Still, Melton states the conversion from natural to artificial

turf "is a big mistake."

To improve the endurance of Lincoln's Seacrest Field, manager Mike Callaghan overseeds every third game and aerifies after the close of the season. Callaghan also dethatches the field. One of the first steps he took when he assumed responsibility was to improve the drainage.

Nebraska extension turf specialist

Robert Shearman stressed annual renovation for intensively used fields, fertilization three or four times per year, and control of persistent weeds.

Richard Hurley, research director for Lofts Pedigreed Seed Co., said perennial ryegrass is the best value for use on athletic fields. If use can be limited to once a week, then Kentucky blue-

*Continues on page 68*

## IT TAKES A TOUGH ENGINE TO KEEP UP WITH A GOODALL.



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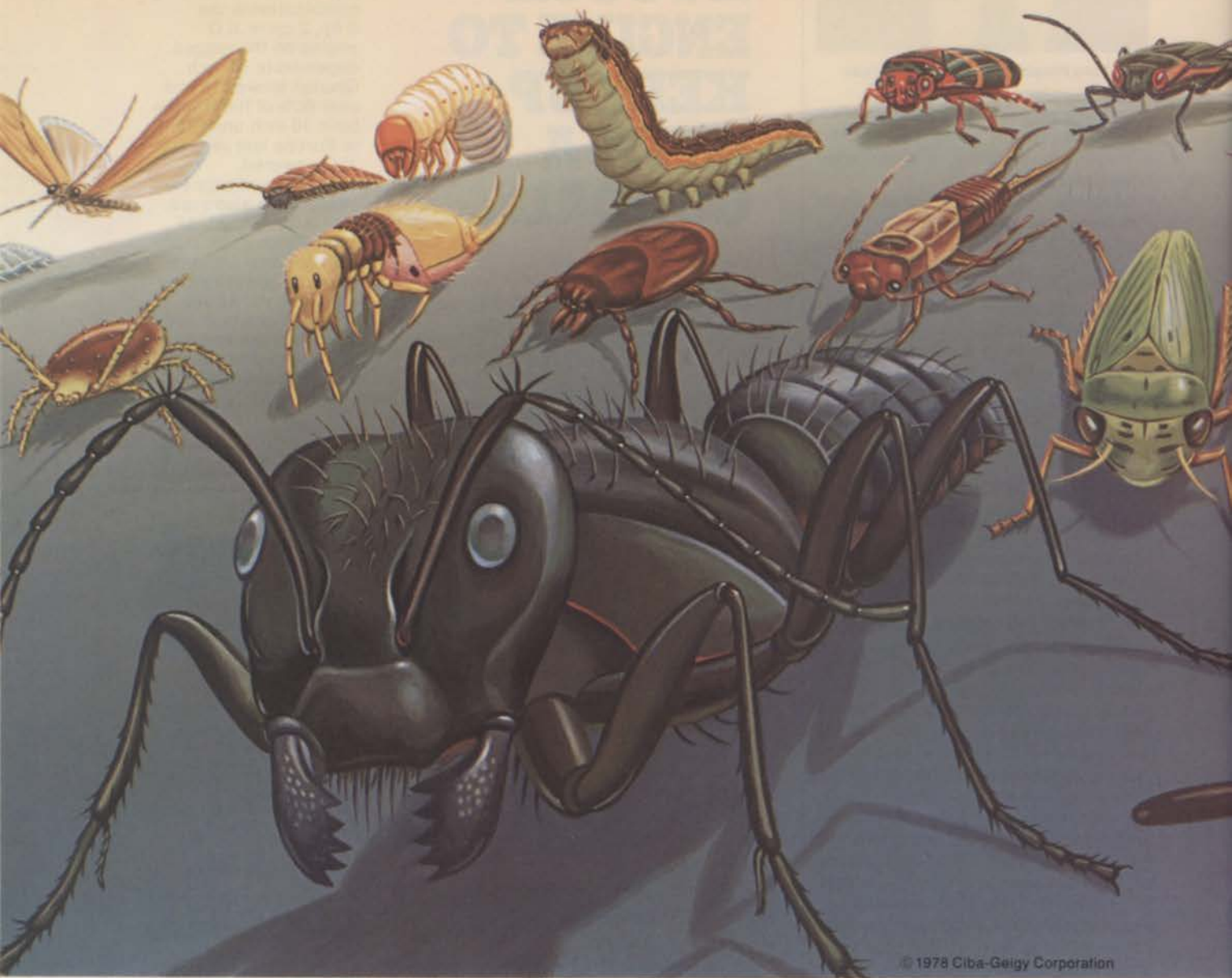
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temperatures and to the cooling or heating that is governed by radiation and by evaporation of water. Temperatures presumably limit litter decomposition rates very commonly.

#### Moisture and Aeration

Poor aeration (excess water) and surface drying are associated with thatch accumulation (Beard, 1973). Ulehlova (1973) indicated that decomposition processes are essentially stopped in dry litter. She also indicated that the decomposition proceeds for a short time during overly wet conditions, but is soon halted by the accumulation of toxins produced when decomposition occurs under conditions of low oxygen. The toxins persist for some time even after aeration is re-established, and thus act to extend the time of inhibition. Hunt (1978) has described the moisture conditions which limit decomposition. Peak levels for decomposition are narrow (ca. -1 to -5 bars). These limits are stated in terms of water energy levels, and are therefore difficult to portray in readily understood terms. Suffice it to say that thatch that appears even slightly dry will probably be in the -15 to -100 bar range, and thatch which glistens with moisture when squeezed tightly will be in the 0 to -1 bar range. Turf is fully capable of growth when thatch is extremely dry, because the roots extract water from lower in the soil profile. Moisture can therefore limit thatch decomposition in turf during wet or dry periods.

#### Summary

Thatch is commonly associated with the use of intensive management practices on turfgrasses. But most of us have also had to address thatch accumulations on turfs that receive very low levels of management. These turf areas are seldom irrigated, limed or fertilized, and are therefore often inhospitable to the activities of microorganisms in the thatch layer.

Furthermore, low management turfs often have lower levels of leaf, stem and root production than found in high management turfs. Smith (1979) predicted that at tissue production rates below a certain broad minimum, the amounts of decomposer microorganisms will become restricted by a lack of available carbon, and that plant litter will begin to accumulate. At production levels above the minimum the amounts of tissues produced simply outstrips the ability of microorganisms to keep it decomposed. These principles indicate that a moderate level of management may be best adapted for control of turfgrass thatch. More research is obviously necessary, but there appears to be no reason to believe that thatch is only a high management problem.

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