OCTOBER, 1967
VOL. 20. NO. 16

The Bull Sheet

Official Bulletin
Midwest Association of Golf Course Superintendents

COMING MEETINGS

SUPERINTENDENT - MANAGERS
Skokie Country Club
OCTOBER 9, 1967

ANNUAL GOLF TOURNAMENT
Beverly Country Club
OCTOBER 16, 1967

IN THIS ISSUE

THE BULL SHEET, official publication of THE MIDWEST ASSOCIATION OF GOLF COURSE SUPERINTENDENTS.

TOM BURROWS, Editor
1648 Prairie
Northbrook, Illinois 60062

NEW MEMBERS

The name of prospective member and his two sponsors will appear in the Bull Sheet prior to his acceptance as a member by the Executive Committee. Any objection by our members of the prospective member's qualifications may be voiced in a signed letter to the President within ten days after receiving the Bull Sheet. Any objections received will be heard by the Executive Committee prior to the candidate's acceptance.

Dudley Smith

New Members

1. William A. Miller - A
   1048 Peace Drice
   Wheeling, Ill. 60090

2. Donald G. Hanneman - E (Temp.)
   (will be B next year)
   120 Revere Drive
   Libertyville, Ill. 60048

3. James C. Freeman - EE
   811 Skokie Blvd.
   Northbrook, Ill. 60062

4. David R. Didier - A
   2501 Midlothian
   Mundelein, Ill. 60060

5. Roger A. O'Connell - A
   6200 S. Madison
   Hinsdale, Ill. 60521
   Ruth Lake Country Club
   Transfer from Ohio Association

Dudley Smith, 1967 President

The President's Message

It is that time of year again, when the superintendents' work becomes more routine. We can plan tomorrow's schedule rather than have a critical decision to make in the next ten minutes. The burden of temporary summer help has eased, and the solid corps of reliable workers remains. In these "harvest-moon" days, a day of golf can be planned ahead and really enjoyed.

Such a memorable day was September 8th at Knollwood. Butch Bernardino certainly must be a proud man. All the facilities at Knollwood were outstanding; a delicious menu, courteous clubhouse staff, and beautifully manicured golf course. Even the weather was ideal. Congratulations to Joe Dinelli for his fine round of golf. Joe had the touch on those lightning fast greens.

It was a pleasure to have President Art Post and members of his Wisconsin Association join us at Knollwood. I'm sure they all enjoyed themselves. Did you know that we had over 95 golfers, and 135 sit down for dinner? Gentlemen, you are to be commended for this attendance. This was a fine tribute to the Knollwood Country Club and its dedicated superintendent Lindo Bernardino.

Sincerely,
Dudley Smith

Our deepest Sympathy to the George F. Rossett Family. Mr. Rossett, who passed away September 4, 1967, was the father of Ron and brother of Gobe Rossett.

Meetings Coming Up

Monday, October 9th

Superintendent - Managers Golf Outing
Skokie Country Club
Glencoe, Illinois
Golf — 10:00 A.M. and on . . .
Lunch — 12:00 to 2:00 P.M.
Cocktails - Hors d'oeuvers — 6:00 P.M.
Dinner — 7:30 P.M.
Host Superintendent: Ron Rossett

Monday, October 16th

Midwest G. C. S. A. Annual Golf Tournament
Beverly Country Club
Dinner — 7:30 P.M.
Host Superintendent: Ted Woehrle

November 4th

Fall Dinner Dance
Acacia Country Club
Host: Ray Shei
Dance Chairman: Harold Fredrickson
Tickets to be sold at door only.

November 28-29

Fall Turf Clinic - Midwest G.C.S.A.
Medinah Country Club
Host: Gerald Dearie

December 7 & 8

Illinois Turfgrass Conference
University of Illinois
Urbana, Illinois

December 13-14

Wisconsin Turfgrass Symposium
Pfister Hotel
Milwaukee, Wisconsin

February 18-23

G.C.S.A.A. 39th Turf Conference
San Francisco, California

The following letter was composed by committeemen Dudley Smith, Marvin Gruening, Oscar Miles, Donald Gerber, Roy Nelson, for circulation among the various chapters of our National organization, and, Sherwood Moore, chairman of the Nominating Committee.

Dear Fellow Member,

The members of the Midwest Association of Golf Course Superintendents would like to make known to our fellow members of the Golf Course Superintendents Association of America our views concerning the forthcoming nomination of Officers and Directors for the Annual Meeting of the G.C.S.A.A.

Our National organization was founded by a group of men, known as "greenskeepers", who strove to improve turfgrass conditions on golf courses by means of collecting scientific and related information, and then distributing this information to the members. Through the years the G.C.S.A.A. has had the leadership of many devoted and knowledgeable men whose efforts have influenced the development of better golf course superintendents, better golf courses, and the growth of our national organization. They have been our representatives and they have been representative of us — golf course superintendents.

At our August meeting the members voted that the Midwest Association of Golf Course Superintendents will not support a candidate who performs his professional duties under a title other than and exclusively as "Golf Course Superintendent".

We trust that you share our convictions.

With our best regards
Midwest Association of
Golf Course Superintendents

The following is "The President's Message" by Leon V. St. Pierre, President of the New England GCSA, as published in the March, 1967 issue of their "Newsletter." Mr. St. Pierre submitted this editorial as a "letter" to the Executive Committee of GCSAA at the Spring Meeting. It is reproduced here in its entirety for your information as a matter for consideration by the Association Planning Committee.

PRESIDENT'S MESSAGE

Are you a Superintendent or a Club Manager?

This question has been posed many times over the last year and caused tempers to reach the boiling point. It is one question that needs an immediate answer and a change in the National Association's By-Laws.

A Golf Course Superintendent is naturally the man in charge of maintaining the golf course, club house grounds, parking lots, all outdoor activities areas, and more often than not, the golf carts.

The man in charge of buildings and grounds, should be called Superintendent of buildings and grounds, and be compensated for the extra responsibility.

The above job descriptions are very clearly outlined, and no quarrel should be raised on these classifications.

Friction develops when a Golf Course Superintendent takes over the responsibility of the Club office staff, bar and club dining facilities. He then bacomes a General Manager. More power to this individual, if he has the capabilities to efficiently carry out this task.

I believe, he should then resign from the Golf Course Superintendent Association, and join the Club Managers' Association. (continued)

Let us ask ourselves several serious questions on this subject before it becomes a problem:

1. What are a Superintendent's credentials to become a Manager and what are a Manager's credentials to become a Superintendent of a golf course?
2. What are the full implications in making the two jobs into one?

The answers to the above questions are simple. Greed, and power hungry individuals are setting out to wreck what it took 40 years to establish.

The working structure of club management should be shared equally three ways:

Golf Course Superintendent;
Manager;
Golf Professional.

Let the Superintendent do an outstanding job of maintaining the golf course.

Or, are you ready to go to Hotel Management School and become a Manager?

Leon V. St. Pierre
President

"THE EXPRESSWAY"

Six Penn State turf students now "on the job training" under Midwest superintendents will head back to school on October 9 . . . Fred Opperman of Elmhurst C. C. has had 5000 yards of fill soil hauled onto the #10 fairway, raising the fairway over three feet. This will eliminate the annual flooding of that fairway . . . Elmhurst will also reconstruct their #1 green this fall . . . Sprinkler Irrigation Company designed a complete green, tee and fairway irrigation system . . . Oldfield Equipment Company of Cincinnati will install . . . Dick Nugent, golf course architect was in a bad truck accident in August. Dick received only scratches and bruises while the truck was a total wreck . . . Harold and Susy flew briefly to California last month to attend Harold's sister's wedding. Harold said he was happy to get back to the cool high 80's of Chicago . . . Suzy's 1966 Fall Turf Clinic presentation "Honey, your supper is on the Table", has now been reprinted in a total of four different magazines . . . Joe Deschler, a Penn State turf Graduate in 1960 has given up his superintendent's position at the Tripoli C. C., Milwaukee to go into sales, good luck on your new venture, Joe! . . . Bob Ellsworth of the National Golf Foundation is back to work after two relaxing weeks in Wisconsin's Door County . . . Donna Voykin (Paul's) has spent several weeks in the hospital after an auto accident . . . Bill Smith of George Davis Co. was in the hospital in early August; now out doing very well . . . 40 Class A and B members attended the August Prestwick meeting . . . Koelper Excavating Company reconstructed Glencoe Golf Club's #5 green . . . Ron Bild (Peter's son) is the Veliscol representative in North and South Carolina and will be married October 21, in Waukegan . . . Peter, at Glen Flora C. C., will boost their irrigation system from 1000 to 1500 GPM, to enable his watering program to be carried out and not interfere with twilight golfers . . . Peter will also construct 6 new ladies tees and reconstruct 3 greens . . . Dick Ryan, (Pat's son) now a senior at Marquette University is the new President of the National Committee of Evans Scholarship . . . Joe Jemsick plans to install fairway irrigation systems at Fresh Meadows and Glenwoodie and seed all courses to bent . . . Gerald Dearie, Sr. may build two greens this fall. . . Art Benson, Jr., Butterfield C. C. now has construction under way with his last nine greens and tees — Killian & Nugent designed and Didier is constructing . . . Old Orchard C. C. plans to rebuild #7 green and remodel the adjoining lake . . . Joliet Park District plan to build a new 18 holes . . . Didier Construction Company recently completed two additional holes at Northmoor Country Club.

If a free society cannot help the many who are poor, it cannot save the few who are rich . . .
— J. F. Kennedy

Control of Aquatic Plants

Robert C. Hiltibran
Aquatic Biology Section
Illinois Natural History Survey
Urbana, Illinois 61801

Many persons, including golfers, have seen bodies of water with thick infestations of aquatic vegetation which appear to be so dense that a golf ball at the water hazard could not penetrate the mats. The superintendents have had their frustrations when the vegetation infestation clogs the water intake. There is the body of water strategically located in a beautiful setting which has its beauty marred by the ussightly appearance of aquatic plant infestations. The question, therefore, is can anything be done to prevent or control these infestations? Or is it doomed to be this way from this time forward?

At the present time there are several herbicides available which, when used at the recommended rates against the aquatic species known to be susceptible to the various herbicides, will eliminate many of the existing stands of common aquatic weeds. It is the purpose of this paper to present some of these suggestions.

There are three general methods which can be used to control the aquatic plants. These are: (1) Mechanical methods such as removing the infestation by some mechanical device such as the dragging of chains, underwater cutters, etc. (2) Biological methods such as the introduction of plant-feeding carp or other bottom-rooting fish into the pond or the use of fertilizer. Biological methods can also result in another problem; for example, using fertilizer could help produce a dense mat of filamentous algae which could be more troubelsome than the other aquatic vegetations. (3) The use of chemical preparations.

Since a general-purpose herbicide is not currently available, it is necessary to select a suitable herbicide preparation which will control the aquatic plant infesting the body of water.

The first step in any weed control program is to identify the plant. To facilitate the identification, the various common aquatic plants have been grouped into five categories based on their distribution in water. The submersed aquatic plants are further subdivided based on the attachment of the leaf to the center stem. Therefore, by placing the aquatic plant in the appropriate group, selecting a suitable herbicide preparation is made easier.

Group 1 — Free Floating Aquatic Plants

Members of this group float on the water surface and drift with wind and water currents. A common, well-known example is duckweed **(Lemna minor)** which can be controlled by using either liquid Aquathol or diquat cation at a rate of 1 cup per 4 gallons of water and applied as a fine spray to the water surface.

Group 2 — Emergent Aquatic Plants

Plants of this group have their roots in the pond bottom and the stems and leaves extend above the surface of the water. Usually these plants do not grow in water over three or four feet deep. Common examples are cattail **(Typha latifolia)** and arrowhead **(Sagittaria latifolia).**

Group 3 — Submersed with Alternate Leaf Attachment

The various plants in this group are members of the genus **Potamogeton** and have either slender, round, or pointed leaves, or thin membranous, grass-like leaves. Some have leaves with wavy margins. Leaves are all attached to the center stem in an alternate arrangement, i.e., with one leaf from one side of the stem, alternating with the next leaf above or below on the opposite side. These plants have flowers and fruiting bodies of rather similar appearance and location.

Common examples of this group in Illinois are curlyleaf pondweed **(Potamogeton crispus),** leafy pondweed **(P. foliosus),** sago pondweed **(P. pectinatus),** and small pondweed **(P. pusillus).** These species can be controlled with Aquathol (Pennsalt Chemical Co.) at a rate of one part per million, or diquat cation (Chevron Chemical Co.) at 0.5 ppm.

Group 4 — Submersed Plants with Whorled or Opposite Leaf Attachment

These plants have either two leaves attached to the same point on the center stem (opposite) or four leaves attached to the same point on the center stem (whorled). The leaf structure will vary greatly and may include grass-type leaves or leaves with very delicate structure. The important point is the manner of leaf attachment. Common representative species are coontail **(Ceratophyllum demersum),** water milfoil **(Myriophyllum spp.),** and southern naiad **(Najas guadalupensis).** Coontail and water milfoil can be controlled with granular 2,4-D or liquid silvex at 2 parts per million (ppm), whereas all three species can be controlled with diquat cation at a rate of 1 ppm.

Group 5 — Floatingleaf Aquatic Plants

Although the plants which constitute this group come from several families, they all have leaves that float upon the water surface. These vary from small oval ones to one which are long and narrow. Leaves vary in length and/or diameter from ¾-inch to several inches. Common examples of this group are American pondweed **(P. nodosus),** which can be controlled by Aquathol at a rate of 1 ppm or an application of ½ cup of liquid Aquathol (2 lbs./gal.) diluted to one with water and applied to the floating leaves, and water lily, which can be controlled by granular 2,4-D at a rate of 2 lbs. of 20% formulation per 440 square feet.

Algae, both the filamentous species and those that resemble true plants, such as **Chara** spp. and **Netella** spp., can be controlled by using copper sulfate.

It is not possible in a short article to discuss all the weed problems and the various control techniques. For additional help in indentification, the reader is referred to the series of mimeographed leaflets, "The Chemical Control of Some Aquatic plants," distributed by the Illinois Natural History Survey or Fishery Bulletin No. 4, "Aquatic Weeds," distributed by the Division of Fisheries, Department of Conservation. The above publications have identification aids and control recommendations. "Aquatic Plants of Illinois" available from Illinois State Museum Popular Science Series, Vol. VI, is available from the State Museum and contains only indentification techniques.

L. B. J. wants $20,000,000.00 for a war on rodents. Now that's what we call one h - - - of a better mouse trap!

POSITION OPEN

GLENCOE GOLF CLUB SUPERINTENDENT

Salary open. 18-hole municipal course (with over $150,000 in improvements in past six years), seeks Superintendent. Additional greens and irrigation improvements scheduled. Applicant should have five years experience in golf course operation, maintenance, and landscaping, with two years in supervisory capacity. Training in turf management, agronomy, or horticulture highly desirable. Send confidential resume to Village Manager, Village Hall, Glencoe, Illinois 60022. Phone (312) 835-4111.

Victor E. de St. Aubin, Jr. *

Quality Nursery Stock

(Mr. St. Aubin now serves as president of both the Ornamental Growers of Northern Illinois and the Illinois State Nurserymen's Association.)

Quality nursery stock for golf course plantings and other landscaping work will, in my opinion, continue to be in good supply in the years ahead. The impact of the national beautification effort, however, is having a decided effect on the industry. Greatest demand at the present time seems to center upon the larger, more mature trees and shrubs needed for roadside planting.

Prices of nursery stock can be expected to parallel the cost of living level which I predict will continue to spiral upward. Aside from cost of living, other factors confronting near-urban nurserymen and golf courses as well, will also have a bearing on prices.

The spreading urban growth with its accompanying increased taxes and corresponding increase in property values will, in the not too distant future, make it impractical for growers in now suburban areas to continue in those locations. There comes a point at which the profit on an acre of nursery stock no longer justifies the expense and care that is invested in it.

I'm sure that many golf clubs face a similar problem. Equity clubs, on the other hand, are in a less vulnerable position because of their organizational structure and ability to withstand the pressures of commercial and residential development.

I fully expect that a new format will emerge in the nursery industry in a relatively few years, a format which will provide plant material at comparatively lower prices. I anticipate that present owners of independent nurseries will band into groups, acquire large tracts of land in more remote rural areas where land values remain reasonable, and set up operation under joint management. With the network of high speed highways, coupled with relatively cheap transportation costs, this type of operation should enable the buying public in urban and suburban areas to effect significant savings in landscaping.

I look for a surge in demand for nursery stock when the Viet Nam conflict is concluded and thousands of young men return home eager to purchase houses and landscaping.

In view of these various economic factors that point to higher costs in the immediate future and the fact that the national beautification program is gaining momenum, I would encourage groundskeepers and the public not to defer plans for planting projects.

* President, Eugene A. de Aubin & Bros. Inc.
Addison, Illinois.

PRESSURE POINTS

When stewardesses on British Overseas Airways Corp. planes complained that their skirts fitted on the ground but not in the air, a BOAC spokesman blamed it all on Sir Robert Boyle's Law on gasses. This law says that if the quantity and temperature of a gas remain constant, its volume will vary inversely with pressure.

The application of the law to skirts is simple: air pressure decreases as the airplane ascends, and thus the pressure on the gas in a stewardess's stomach lessen, which means the volume of the gas increases. In other words her tummy bulges. To overcome this condition the stewardesses now wear adjustable skirts.

C. E. (Scotty) Stewart

Virginia Polytechnic Institute

Blacksburg, Virginia

Study options in science (for those anticipating graduate work), technical aspects, and business are offered four-year undergraduate students in Virginia Polytechnic's turfgrass management program. Under the direction of Drs. R. E. Blaser and R. E. Schmidt, Professor and Assistant Professor of Agronomy, the VPI program is conducted within the Department of Agronomy, with the Departments of Plant Pathology and Physiology, and Horticulture cooperating.

Four-year undergraduate and graduate programs are offered, leading to B.S., M.S., and Ph.D. degrees in agronomy with a turf ecology option. Graduate degrees are basically research degrees, and the course of study is selected primarily on student interests.

VPI's turf program was started in the late 1950's, with the first formal course being offered in 1961. There have been about 10 graduates; enrollment now stands at 14. Admission to Virginia Tech. is required for turf study, and students must be high school graduates who have satisfactorily passed college entrance exams.

Starting date for 1967's class is Sept. 13. Applications are accepted any time, but to assure favorable consideration, they should be made six to nine months ahead of anticipated attendance date. Tuition, paid only by nonresidents, is $140 per quarter. On-the-Job training is included as an undergraduate requirement.

Requests for particulars on Virginia Tech's program should go to Dr. H. L. Dunton, Head, Department of Agronomy.

Seeded Fairways

The Lawn Institute — Dr. Robert W. Schery

Fairways, of course, cannot bear the same budget burdens that do the greens. A green, whether vegetatively planted at considerable expense, or economically with Penncross seed, still requires a high level of maintenance (special mowing, feeding, disease control, dethatching, and so on). A "breed of cat" satisfied by lower maintenance is needed for the fairway, — a grass that stands close mowing, is not so aggressive (thatch-building) as are the creeping bentgrasses, is economical and always available in good supply. The answer for many golf courses seems to be a colonial bentgrass, of which the Highland variety is the most used. Some of the bentgrasses available as seed are given in the list.

Colonial bentgrasses may be utilized in several ways. For irrigated fairways that have turned largely to **Poa annua,** Highland bentgrass can be seeded as "insurance". This was done at Firestone Country Club some years ago, accompanied by vertical mowing of the fairways. Even on Kentucky bluegrass-fine fescue fairways mowed close to accommodate tournament demands, a bolstering with Highland seems to make sense, for providing "body" preferable to that from weeds (which otherwise surely will come when bluegrass is mowed close).

Where the fairway is renovated or newly planted consider a mixture of colonial bentgrass seed with a small percentage of Kentucky bluegrass and fine fescue. In cool weather a bentgrass such as Highland is slow to show (indeed, it may not be strongly evident until the following year). Fine fescue sprouts quickly, yet, unlike aggressive nursegrass, is acceptable in turf. Bluegrass is a little slower than fine fescue but should be included too; it often persists even under short mowing, although not dense enough without bent to provide a good ball lie. At the Lawn Institute we have had excellent results from seeding a combination of these grasses, mowed and managed for the bentgrass.

This looks like a winning combination for the fairways that must be mowed close, especially irrigated ones. Maintenance is not great. Any bentgrass, however, profits from fertilization every month or six weeks during the growing season. A suggested rate might be 1 lb. (actual) nitrogen per thousand square feet each few weeks from late spring into October. This would be 6 or 7 lb. of a good balanced fertilizer such as 16-5-11, or perhaps a 15-5-5 where potassium reserves are known to be adequate.

Seeded Bentgrasses

Astoria — Lighter-colored than Highland, but similar, originally from a very moist climatic area.

Exetrer — A new colonial type selected in Rhode Island, even-textured but not of as good early and late color as Highland at the Lawn Institute.

Highland — The famed "workhorse" bentgrass from a restricted seasonally-drier area in Oregon, dark bluish-green, economical, readily available.

Holfior — a Holland selection of colonial bentgrass said to grow erectly.

Kingstown — A very fine-textured velvet bent selected in Rhode Island, more troublesome to maintain than Highland or Penncross.

Penncross — Prize seeded creeping bentgrass from three vegetatively propagated parent strains; vigorous and disease resistant.

Seaside — An older mixed population of creeping bentgrass from the Oregon coast, not so disease-resistant as Penncross.

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TORNADO INFORMATION...

Safety Rules...

WHEN A TORNADO APPROACHES, YOUR IMMEDIATE ACTION MAY MEAN LIFE OR DEATH.

IN CITIES OR TOWNS

Seek inside shelter, preferably in a tornado cellar, underground excavation, or a steel-framed or reinforced concrete building of substantial construction. STAY AWAY FROM WINDOWS!

In office buildings—stand in an interior hallway on a lower floor, preferably in the basement.

In factories—On receiving a tornado warning, post a lookout. Workers should move quickly to sections of the plant offering the greatest protection in accordance with advance plans.

In Homes—the corner of the basement toward the tornado usually offers the greatest safety. in a house with no basement, take cover under heavy furniture in the center part of the house. Keep some windows open, but stay away from them!

IN SCHOOLS

Go to storm cellar or underground excavation if available. If there is no storm cellar but building is of reinforced construction, stay inside, away from windows. Whenever possible, go to an interior hallway on the lowest floor. AVOID AUDITORIUMS AND GYMNASIUMS with large poorly supported roofs.

If a building is not of reinforced construction, go quickly to a nearby reinforced building, or to a ravine or open ditch and lie flat.

IN OPEN COUNTRY

Move away from the tornado's path at a right angle. If there is no time to escape, lie flat in the nearest depression, such as a ditch or ravine.

KEEP LISTENING

Your radio and television stations will broadcast the latest tornado advisory information. Call the Weather Bureau only to report a TORNADO.

U.S. Department of Commerce
Weather Bureau

Washington, D.C.
Revised April 1964

Millipedes, Centipedes, and Sowbugs

By Stan Rachesky

Extension Entomologist, University of Illinois

DESCRIPTION: Millipedes are slow-moving, hard-shelled, wormlike, animals with two pairs of legs on each body segment. Millipedes have 30 or more pairs of short legs spaced uniformly along the entire length of their body. The adults are 1 to 2 inches long and are brown, tan or gray in color. Millipedes curl into a ball when disturbed.

House centipedes are flattened, elongated animals with one pair of extremely long legs per body segment. They are an inch or more in length, witha pair of long antennae springing from the head with 15 pairs of long legs arranged along the sides of the body. When disturbed, they move very rapidly.

Sowbugs and pillbugs are small, hard-shelled, tubular-bodied, segmented animals with 7 pairs of legs. Sowbugs have two prominent tail-like appendages that the pillbug does not have. Pillbugs roll up into a tight little ball when disturbed. Sowbugs are unable to do this.

LIFE CYCLE AND HABITS: Sowbugs, pillbugs, millipedes, and centipedes prefer moist locations. They are often found hiding in shrubbery beds, about the base of plants, or around the foundation of buildings where decaying, damp leaves accumulate. They are often found under objects on damp ground—such as clods, rocks, bits of manure, boards, and refuse piles. Storm sewers also provide a haven for sowbugs, pillbugs, and millipedes. At times, they will invade damp basement areas or crawl spaces as well as the first-floor level. When this happens, they are apt to be present in large numbers immediately outside the building. They are inactive in the winter. Most millipedes, sowbugs, and pillbugs are scavengers and feed on decaying plant material. But some species will feed on living plants, causing them to stunt, grow slowly or die, and the root system will be found to have been severly pruned. Millipedes overwinter as adults in protected areas and lay their eggs in the summer.

Seeking a place to hibernate in the fall of the year, millipedes become troublesome whey they migrate into buildings. They swarm into basements and first-floor rooms and congregate heavily in garages. Large numbers of millipedes have been known to migrate into houses from mounds of dirt and refuse made by excavations in new subdivisions, where the unused soil is still filled with decaying vegetation. Occasionally, they congregate in lawns after heavp rains, but do no damage.

House centipedes live outdoors as well as indoors. In the home, they can be found in damp closets, bathrooms and in moist basements where they feed on insects and spiders.

NATURE OF INJURY: Sowbugs, pillbugs, and millipedes do not bite man nor cause damage in homes, but are annoying by their presence. However, in greenhouses they sometimes feed on roots and tender plant parts, especially those of bedding plants and seedlings. Normally, they feed on decaying vegetable matter in their outdoor habitat.

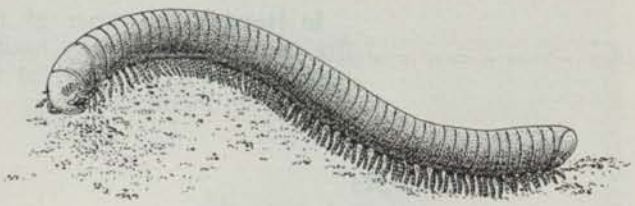
Some species of millipedes give off a foul-smelling fluid through openings along the sides of their body.

House centipedes are actually beneficial, causing no injury to stored products. If crushed, they may bite, causing some pain and swelling. Centipedes are annoying due to their habit of darting across floors or walls, often darting directly toward a person when they are suddenly disturbed.

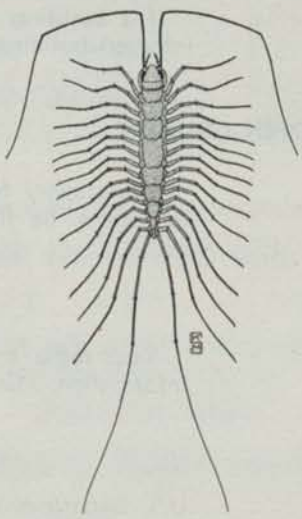
CONTROL: Millipedes, centipedes, sowbugs and pillbugs may be controlled by removing and discarding all accumulations of leaves, rocks, boards and other trash around the foundation of buildings. In cases of serious infection treat with either carbaryl (sevin) diazinon or trichlorfon. As sprays use at least 25 gallons of water per 10,000 square feet. Do not water for 72 hours after treatment. These may also be applied as granules. Consult the label for application rates.

For control of these pests in the living quarters of the home, use a vacuum cleaner. But in basement areas or garages, sprays of 0.5 percent diazinon can be used.

Common Pillbug



Common Millipede



House Centipede

Bluegrass

Dr. Robert W. Schery, Director
The Lawn Institute

Canadian researchers have found that one solitary Kentucky bluegrass plant, such as everyone has (or wishes he had) growing abundantly in his front lawn, is able to **produce 272 yards of rhizomes in a grow-in season.** That adds up to plenty of "spreading power", for it is by rhizomes that bluegrass increases its coverage. A Kentucky bluegrass rhizome is nothing more than a special stem that grows underground for a certain distance, then turns up to become a new daughter plant with its own roots. It's easy to see how a single Kentucky bluegrass seed (and you get over two million of them in a pound for about a dollar) could, in time, account for many square yards of lawn. That, of course, is the big bargain in top quality lawnseed.

The Canadian research shows that rhizome spreading is not erratic. Indeed, each rhizome follows a set sequence of growth steps. The quantity of rhizomes, however, depends upon how well the bluegrass flourishes. If it is mowed fairly tall so that there is a lot of green leaf to make food, and if the soil is good, well fertilized, and if weeds or other pests are controlled, then, of course, there will be more rhizomes. These are the very practices that spell a healthy, sparkling bluegrass lawn.

As to the rhizome, briefly here's how it grows. In response to darkness and accumulated carbon dioxide in the soil, it first bends downward away from the leaves, while twisting exactly 90°. This is independent of gravity, and would be the same if the plant were suspended upside down. When less than an inch long it suddenly responds to gravity and grows horizontally instead of downward. The tip slowly rotates, like an auger enabling it to better penetrate the soil. After several inches of growth the rhizome turns upward, and of course eventually pokes out of the soil as a new blugrass plant.

Ideally rhizomes grow away from a bluegrass plant in all directions, like the spokes of a wheel. But as these become daughter plants, none of their rhizomes grow towards the original mother plant, only away from it. Thus the colony spreads in an ever-widening circle. When the colony grows on a hill, the downhill rhizomes reach the soil surface quickly, while those on the uphill side penetrate more deeply into the soil. Thus bluegrass on a slope moves uphill.

One doesn't even realize that this sort of thing is going on in the lawn; it can't be seen, for if the rhizome is exposed it changes its behavior, and grows upward into a new green plant. Nevertheless, rhizoming is a special feature of Kentucky bluegrass that makes it such an excellent turf. As a result of rhizoming a beautiful sod can eventuate from even light seeding. Each bluegrass seed first grows a dense cluster of green leaves; then with food gained by the leaves rhizomes spread underground. How quickly sod develops depends upon weather and soil, and to some extent variety. Park Kentucky bluegrass sprouts very quickly, while slower Merion spreads prolifically.

Half of the world is hungry, and we may be sure it is the same half of the world that is illiterate.
— Friendship Press

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