1. REAR WHEEL DRIVE

Roseman Rear Wheel Drive permits overhanging of traps and bunkers and trimming close to trees, no side wheel marks. Laminated puncture-proof tires overcome objectionable bouncing of pneumatic tires. The caterpillar-action of laminated tires give non skid traction, making it possible to mow heaviest turf growths. Rear Wheel Drive available in Rough or Fairway mower.

2. HOLLOW ROLLER DRIVE

Roseman Hollow-Roller mowers place less weight p.s.i. on turf than any other type. Less compaction results. Hollow drum design permits mowing on soft or sandy soils and on wet fairways with no wheel marks. Improved turf, better playing surfaces and finer finished cut result. All putting greens are cut with rear roller drive mowers. Why not give your fairways putting green treatment?
More important, all these plant-food elements known to be needed for vigorous, healthy growth are naturally chelated. This means they are not subject to "tie-up" or "unavailability" even in the trickiest soils.

**Book Review**

Golf: Its History, People and Events, by Will Grimsley, with a special section on famous courses by Robert Trent Jones, Prentice-Hall Inc. Englewood Cliffs, N. J., $19.95. This is a championship job. Will Grimsley, talented Associated Press sports writer, has spent many years on the golf scene, covering heavy action, absorbing atmosphere, writing about and for celebrated players. He has patiently dug for fact among the early legends and he has written his findings in compact but colorful style. Herbert Warren Wind, Charles Price, and the late H. E. Martin, among other competent golf historians, have covered the subject well, but Grimsley’s book is the classic contribution of the lot. Also, Prentice-Hall has dressed it up with fine illustrations—Herb Graffis

**LEARNING continued from page 90**

formation indicating that soil warming may be beneficial and practical. With present technology the cost is high but is not prohibitive for use on the more valuable turf areas.

The effects of winter weather were felt on bermudagrass greens in the South and on some bentgrass and many Poa annua greens in the North. Did the middle section of the country escape injury? Indeed it did not! The great middle belt of the nation, often characterized as the "crabgrass belt" depends primarily upon bentgrass for greens and bermudagrass for fairways. In 1966, greens came through the winter in fine shape, but the long, cool, moist spring kept soil temperatures too low for bermudagrass growth.

Because crabgrass begins growth about the time bermudagrass breaks dormancy and goosegrass appears shortly afterward, superintendents prepare early to control
these pests. But in 1966 the bermudagrass developed so slowly and because these weedy grasses were controlled, many fairways in the vicinity of Kansas City and St. Louis displayed a rather sparse cover until midsummer when bermudagrass finally began to grow. Quite a few superintendents began to take another look at the possibility of using a Zoysia-bermudagrass mixture.

Golf courses in mid-America suffered another blow from the weather in July. The long, wet, cold spring had provided conditions conducive to thin leaves, thin cutin layers, succulent growth and shallow root systems. Then the weather suddenly turned very hot. Some of our readers will recall the announcement from Busch Stadium in St. Louis during the All-Star baseball game. The temperature reached a high of 106°.

Under such extreme conditions and such rapid changes turf must suffer. It is a credit to the skill of golf course superintendents that so little turf was lost.

continued on next page

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February/1967 93
If the average superintendent could be faulted on any point during this period of stress, it would be that of trying to do too much. In their zeal to control diseases and organisms such as brownpatch, helminthosporium, curvularia, and pythium, turf managers resorted to numerous fungicides. Some of these produce a slight burn or discoloration on leaves of grass. Thus while they kill the active fungus, they also weaken the grass.

Therefore, it is my opinion that those who used the milder fungicides from the standpoint of phototoxicity and those who treated their greens a little less frequently fared better during this tough period.

The summer of 1966 was not all bad if it taught us that the zeal to control everything can cause sparse turf.

If weather was the chief source of difficulty on golf courses in 1966, the problems of labor were not far behind. Labor costs continued to increase and as the nation reached maximum employment...
rates, the quality of laborer available to golf clubs deteriorated. This was especially true of seasonal labor. A few clubs have gone to unusual lengths to try to solve the problem. College students are available in some areas; distributive education students of high school age have been used; in rural areas 4-H and FFA members have been employed; and in a few cases handicapped workmen have supplemented the labor force.

One of the products of the labor shortage is the accelerated trend toward mechanization. More superintendents are providing "wheels" for their workmen in order that they can move around the course more efficiently.

The trend toward greater use of automatic irrigation can be attributed in part to the development of more reliable and more versatile equipment and in part to the need to emancipate the night water man (who must be intelligent and cap-

continued on next page
LEARNING

continued from preceding page

able) for other important course work.

While we have no accurate figures it may be assumed that another 1200 to 1500 chemical products for potential use on the golf course reached the market during the last year. These products are the result of continuous institutional and industrial research.

A great many of the new chemicals have been designed for some aspect of weed control. This year, as in every year of the last two decades, we have moved ever closer to the goal of complete selectivity of control among plant species. In 1966, there were many case histories of clubs who undertook weed control programs with phenomenal success.

Pre-emergence herbicides have provided outstanding control of species such as crabgrass and Poa annua in some cases, but erratic results continue to dictate caution in the use of these potentially excellent tools.

Turfgrass research in 1966 covered a

continued on page 98

Turfgrass Short Course

A new 18-month short course in turfgrass management was initiated this fall at the Michigan State University Dept. of Crop Science, East Lansing, Mich. The purpose is to give men classroom training in the fundamentals of turfgrass technology and on-the-job training which will equip them to assume responsible positions in the turfgrass industry.
have been active in this field of golf over 44 years, who have done so much to elevate this from a mixture of amateur enthusiasts and dedicated turf men (prior to professionalism in the turf maintenance area) into a going business.

I well remember my late Dad, J. S. Clapper, Founder and long time President of Toro, telling me of the Graffis Boys to his office and telling him what they planned to do—that is issue a magazine this might even be called the 'bible' of golf maintenance. Dad was so pleased with the idea and the enthusiasm of these 'boys' (that was some 40 years ago) that he virtually promised them a full page ad each issue from Toro as long as he had anything to say about it. I believe that Dad kept his word.

The personal magnetism of these two men, and they each had plenty to spare, was injected into their every statement, verbal as well as written so they actually became the official spokesmen for golf.

ORVILLE CLAPPER
President,
The Clapper Co.

Jacobsen salutes Herb and Joe Graffis on their 40th anniversary of developing GOLFDOM as an outstanding publication in the golf industry. Their foresight and stimulating counsel have been major factors in making golf the great sport and recreation it is today. To Herb and Joe go our congratulations and best wishes for the future.

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broad range of subjects. Of twenty three papers related to turfgrass management presented at the American Society of Agronomy meetings, twelve dealt with some aspect of nutrition. As more information with respect to the economic value of turf has become available, experiment station administrators have devoted a greater effort in this direction. Thus more workers were involved in turfgrass research in 1966 than ever before. Emphasis on such broad subjects as the phenomena affecting winter survival, principles involved in selective pre-emergence control of weeds, Poa annua control, and physiological mechanisms influencing shade tolerance provide a promise of better turf conditions in the future.

These paragraphs reflect a preoccupation with the troubles of 1966. Along with our other difficulties, the profession of turfgrass management lost some of its finest men during the last year. Among
Coming Events

CMAA National Conference, Century Plaza Hotel, Los Angeles, Feb. 7-11.


Maryland Sod Conference, Center of Adult Education, details later, March 2.

Midwest Regional Turf Conference Purdue University, Indiana, March 6-8.

PGA Business School, Park University Motel, College Park, Maryland, March 6-10.

PGA Business School, Chase Park Plaza Hotel, St. Louis, Missouri, March 13-17.

Annual Michigan Turfgrass Conference, Kellogg Center, Michigan State University, March 15-16.

3rd Annual Northern California Turfgrass Exposition, Golden Gate Park, San Francisco, March 22-23.

3rd Annual Nebraska program on "Selection and Handling of Pesticides", Nebraska Center for Continuing Education, U. of Nebraska, April 3-4.

Annual Florida Turfgrass Trade Show, Plantation Field Research Laboratory, Ft. Lauderdale, April 27-29.

them were Howard Denny, Ward Cornwell, R. E. "Dutch" Harman, Warren Lafkin, O. J. Noer, Joe Valentine and Alford Veale. These men have left their mark on our field of work and all of us who knew them well are richer for that privilege.

But despite our losses, our difficulties, and our disappointments, 1966 was a good year for turf. We "took our lumps", but we learned from them, and the next time we encounter such difficulties, we'll be a little wiser and, I think, a little better prepared.

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There are more than 9 million golfers in the United States today, with 500,000 new players expected to take up the game this season. With more golfers, there will inevitably be more golf cars, and the new cars will be smaller, easier to maintain, with a wider range and more freedom of design. They will be more safe, more comfortable and better for courses.

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