



GRAU'S Answers to Turf Questions

By FRED V. GRAU

The first golfers holed out on smoothed sand or smoothed oiled sand; or perhaps on rough, pebbly, weedy meadow grass cropped short by sheep where first, before putting, the worm casts and sheep droppings were swept aside with birch brooms. Many have been the changes until the near-perfect weed-free smooth putting carpet of grass was achieved through trial and error, scientific know-how, and the development of sophisticated mechanical equipment.

The first grass putting greens undoubtedly were only closely-mowed portions of meadow-grass turf. Historically these meadows were composed of fescues, bluegrasses, redtop and native bentgrasses with clumps of orchardgrass, redtop and sweet vernalgrass interspersed. The grasses that showed promise of developing a dense solid turf were 1) red fescue, and 2) native bents. Until recently a popular seed mixture for putting greens has been red fescue and Colonial bent. A Michigan superintendent asks if he can successfully oversee his *fescue* greens with Penn-cross bent seed.

When I became Extension Agronomist in Turf at Penn State in 1935 I saw some very acceptable fescue putting green turf in the northern part of the state. When Pennlawn creeping red fescue was being evaluated at Penn State there were excellent putting surfaces of this grass cut at $\frac{1}{4}$ inch for three years. The plots were adjacent to bentgrass plots so, finally, the excess water finished the fescue. When water shortages are felt more deeply in our economy, we may

once more see fescue putting greens. We have learned much in 50 years.

Probably the first vegetative selection of a native bent was made about 1910-12. It did not stand the test of time and use but it was a beginning. Seed of South German mixed bent was exceedingly popular for many years until imports were cut off during World War II. Selections from these mottled carpets are in wide use today, some good, some mediocre. Some greens became nearly pure velvet bent which grew and spread from a mere one-quarter of one percent of the seed mixture. Velvet, it seemed, thrived on adversity, low fertility and moisture stress.

One of my assignments in 1931 when I was research assistant with the Green Section was to make selections of surviving patches of velvet bents on greens near Atlantic City where the course had been closed for three years with zero maintenance. There were some excellent strains surviving.

With water and fertilizer applied "too much and too often" the velvet bents passed out. Some survive in the New England region but they do not enjoy wide popularity.

Once there was a velvet bent green in St. Louis that was beautiful. It was treated *just like* the creeping bent greens. One August the temperature shot up to the high 90's while there was a series of afternoon showers. I attended the inquest after which there was no more interest in velvet bent.

A well-to-do member of a golf club

continued on page 20

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GRAU'S ANSWERS

continued from page 16

near Philadelphia so much admired a velvet bent green at his club that he commissioned the golf superintendent to plant his 2-acre lawn to sprigs of this beautiful grass. Without the expert care that it needed it was soon riddled with diseases, chinch bugs and sod webworms and, of course, reconverted to bluegrass and fescue.

The first vegetative creeping bent-grasses that I knew were Washington, Metropolitan and Virginia. This was 1927 at Lincoln, Nebraska. Virginia was so grainy that a predictable putt was next to impossible except that, downhill, you could count on the ball rolling off the green. A good name was wasted on this worse-than-useless grass.

Metropolitan was somewhat better but not by much. The blue-green color was distinctive—also the excessive fluffiness which caused the best mowers to scalp. To the best of my knowledge the last Metropolitan greens are at the Des Moines (Iowa) Country Club and they are on their last legs.

Washington bent was the best of the three. Many excellent greens of this grass exist today. Unfortunately a number of different types of "Washingtons" emerged, probably as seedlings from nurseries where seedheads were tolerated. Not all of them were good, therefore this name grass gradually lost favor.

Few people realize that true Washington bent is a "hot-weather" bent. It starts slowly in spring, is at its best during summer, then turns purple with first frosts. *Poa annua* is a natural cool-season companion to Washington. No effort ever should be made to upset this.

During the 30's many selections of creeping bentgrass were collected at Arlington, Virginia, then moved in 1940 to Beltsville. They were assigned "C" numbers. Later many were to be named by the staff of the Green Section. C-1 came from Atlantic City; C-7 from Pine Valley; C-19 from Congressional; C-60 was

continued on page 88

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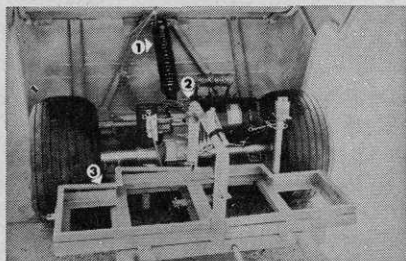


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continued from page 20

Seaside, and so on through 150 numbers. C-115 was my selection from Dahlgren, Virginia. Space will not permit a full discussion of each bent. Suffice it to say here that the important ones in wide usage today are: C-1, Arlington, often blended with C-19 Congressional; C-7, Cohansy; C-15, Toronto, and C-52, Old Orchard.

Later came Penncross, a creeping bent that could be established from *seed* similar to Seaside but superior in performance. Nimisila is a private development named by William Lyons, Ohio. Then there was Evansville from the Midwest and, the latest, Pennpar from Penn State.

The history of improvement of warm-season greens can be told in less time. The real start was made only 20 years ago at Tifton, Georgia. Common Bermuda greens from seed left much to be desired. They were coarse, stemmy, rough, bumpy, stubbly and disease ridden. Frequent

continued on page 90



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continued from page 88

heavy topdressing at heavy expense was required to keep them playable. Overseeding for winter play often hurt the Bermuda. Sometimes it was July before a decent putting surface was secured.

Breeding, selection and testing of finer, more promising strains produced, first, Tifton 127 which was a great improvement over common. But—it was hard to manage. There were seedheads and grainy surfaces. The next release was Tifton 328, named Tifgreen. This is the most popular and the most widely used warm-season grass on putting greens today. During the last few years Tifdwarf came on the scene and gradually is becoming accepted. It is low-growing, dense and dark green with many other admirable qualities. The chief complaint is that it is so dense that overseeded cool-season grasses are introduced with difficulty.

A few greens of U-3 Bermuda still

continued on page 92

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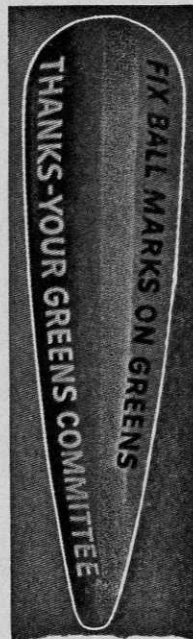
continued from page 90

exist. They are good but not outstanding. Ugandagrass had a brief fling and there are some surprisingly good greens still in play on public courses after ten years of punishment due to low budgets.

Perhaps the prize for the most unusual putting greens should go to the Meyer zoysia greens at Naval Ordnance Lab near Washington, D. C. They have been in continuous successful play for nearly 20 years. They were planted on my recommendations after it was clear that it was desired to have *acceptable* greens with *minimum* maintenance.

There is so much to say about putting greens that it is difficult to stop writing. One more thought *must* be expressed: A particular grass will exhibit different characteristics under varying conditions of individual management. We need more specific information for each individual grass on the management aspects that bring out the *best* in that grass. •

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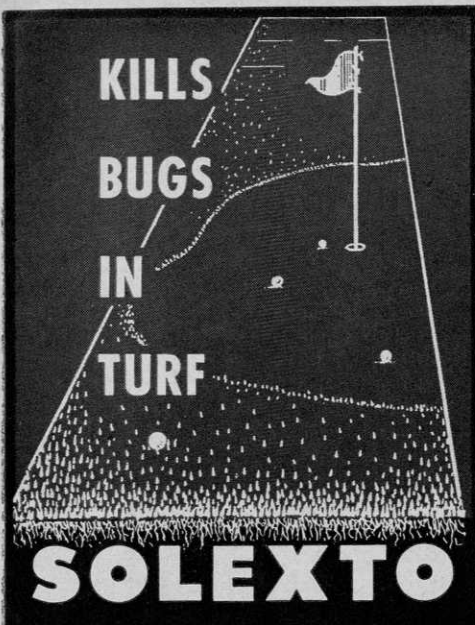
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