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# TIMELY TURF TOPICS

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from the USGA Green Section

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## THE TROPICAL EARTHWORM

The name "tropical earthworm" (*Pheretima hupeinsis* Michaelson) describes a pest of putting greens which previously has been known as stinkworm, eelworm, African earthworm and exotic earthworm. Prof. Gates of Rangoon, Burma, a world authority, identified this insect in 1936. Fleming and Hadley confirm the identification.

The tropical earthworm differs from the common earthworm (*Lumbricus terrestris* Linn) in that it usually is smaller. Each body segment has minute bristles which form a continuous ring, and the body is more round and firm. It is extremely energetic and often whips about like an eel.

When the worms are active during moist warm weather, they throw casts on the greens nearly continuously ; this necessitates constant poling to break up or remove the castings. The combination of the castings and the continuous poling greatly impairs the putting surfaces" and greatly increases labor costs.

The tropical earthworm further is distinguished from the common earthworm in that it cannot be controlled with the treatments which have been successful against the common earthworm.

### Detailed Study Needed

Records of the introduction of this pest into America are lacking. The Green Section called attention to it in the early 1930's. Its presence is being felt along the Atlantic seaboard from Connecticut to Virginia, and it is suspected that the worms are distributed as far south as Florida.

Preliminary work by the Green Section on courses in the Middle Atlantic District in 1946 indicated that detailed studies would have to be made because of the extreme difficulty in effecting any measure of control. Subsequent tests have confirmed

this observation, and mercury compounds, lead arsenate, DDT, Chlordane, Toxophene, Parathion and benzene hexachloride all have been unavailing. The economic significance of the destruction and the interruption of play caused by this pest demands coordinated effort to find a control.

Following a rapid-fire correspondence between H. Alfred Langben, of the Sleepy Hollow Country Club, Scarborough, N. Y., who is a member of the USGA Green Section Committee, and the USGA Green Section office, the seriousness of the problem was brought to the attention of Dr. John C. Schread, Connecticut Agricultural Experiment Station, New Haven, Conn., and Dr. G. H. Ahlgren, Rutgers University, New Brunswick, N. J.

As a result, a meeting was held at the Pelham Country Club, Pelham, N. Y., on the afternoon and evening of July 13, 1948. The meeting was arranged through the efforts of Mr. Langben and Warren E. Lafkin, of the Golf and Lawn Supply Corporation, White Plains, N. Y., cooperating with the New York-Connecticut Turf Improvement Association and the Connecticut, New Jersey and New York Experiment Stations.

Following an examination of damage on greens at the Pelham Country Club, with Arthur Twombly, Superintendent, and a thorough discussion of the problem, the group decided to establish a fund to support needed research on control measures and the life history of the tropical earthworm.

There was initiated on that date the "Tropical Earthworm Research Project," sponsored by the New York-Connecticut Turf Improvement Association with the cooperation of the USGA Green Section, the Metropolitan Golf Association, the New Jersey Golf Association and the New York, New Jersey and Connecticut Agricultural Experiment Stations.

Members of the Sponsoring Committee designated to raise the necessary funds are: H. Alfred Langben, Chairman, Sleepy Hollow Country Club, Scarborough, N. Y.; Glen H. Van Buren, Siwanoy Country Club, Bronxville, N. Y.; David M. Goodstein, Quaker Ridge Golf Club, Scarsdale, N. Y.; and Harold LeFurgy, Treasurer, Winged Foot Golf Club, Mamaroneck, N. Y.

Members of the Research Committee designated to outline and direct the project are: Dr. G. H. Ahlgren, Chairman, Rutgers University, New Brunswick, N. J.; Dr. J. A. Adams, New York State Agricultural Experiment Station, Geneva, N. Y.; Dr. J. H. Schread, Connecticut Agricultural Experiment Station, New Haven, Conn.; and Dr. J. F. Cornman, Cornell University, Ithaca, N. Y.

The greenkeeping profession is represented by Carlton Treat, Montclair Golf Club, Montclair, N. J.; Ben Zukosky, Links Club, Roslyn, N. Y., and Lloyd Scott, Woodway Country Club, Springdale, Conn.

Mr. LeFurgy is receiving contributions

from golf clubs to defray the expenses of this research project. The USGA Green Section urges clubs to contribute to the program because of its importance and because sufficient funds are not available from the USGA or experiment stations. Contributions should be sent to Harold LeFurgy, Winged Foot Golf Club, Mamaroneck, N. Y.

Greenkeepers and superintendents who suspect the presence of the tropical earthworm are invited to send specimens to Dr. G. H. Ahlgren, Rutgers University, New Brunswick, N. J., who will have them identified by the Zoology Department. The worms may be mailed in a closed bottle containing moist soil. Dr. Ahlgren will welcome correspondence concerning observations on possible control measures or other pertinent information which may assist the Research Committee in its work.

*(Acknowledgment: We acknowledge with thanks the material prepared by Ralph E. Engel and Gilbert H. Ahlgren of Rutgers University, which was drawn upon freely in the preparation of this report.)*

## STEEL SPIKES vs. LUG SOLES FOR GOLF SHOES

### A Report on 1948 Trials by USGA Green Section

By FRED V. GRAU and MARVIN H. FERGUSON

Varying reports had reached the Green Section office on the merits and demerits of lug soles on golf shoes. The matter came to a head following a talk with Richard Watson, Superintendent at Chevy Chase Club in Washington, D. C., who reported that lug soles were being prohibited at some courses because of damage to the greens.

W. E. Kavenagh, Goodyear Tire and Rubber Co., Inc., Windsor, Vermont, was contacted by Mr. Watson, who approached the Green Section for an impartial test. Shoes were furnished by Mr. Kavenagh, one pair fitted with standard steel spikes, the other with lug soles.

Tests were conducted on an area of five-year-old bent putting-green turf which was growing on native soil (silty clay) and had had no special preparation. Tests were be-

gun August 12, 1948. In order to simulate heavy foot traffic, single paths were laid out lengthwise on the turf area, which was 12 feet by 30 feet:

PATH No. 1  
Lug sole shoe. Average weight of man 145 pounds

PATH No. 2  
Steel spike shoe. Average weight of man 170 pounds

PATH No. 3  
Steel spike shoe. Average weight of man 145 pounds

PATH No. 4  
Lug sole shoe. Average weight of man 170 pounds

Each path (two footprints wide) was walked for 25 round trips each day on August 12, 13, 16, 17, 18, 23, 24, 25, 26. On August 12 the walking was done by Mr. Kavenagh and Dr. Grau. Thereafter the walking was done by Charlie Wilson, James Wilfong and Alexander Radko of the USGA Green Section.

On August 12 the turf was soggy from