

The NATIONAL GREENKEEPER

(Registered U. S. Patent Office)

Single Copies Twenty-Five Cents.
Yearly Subscription Three Dollars

ROBERT E. POWER,
President and Editor.
FRANK H. PELTON,
Secretary.
C. F. LOWE,
Treasurer.
M. J. FOX,
Assistant Secretary.

EDITORIAL COUNCIL
ALEX BINNIE *Chairman*
FRANK ERMER
M. E. FARNHAM
ALFRED E. LUNDSTROM
WALTER C. REED

Official Organ of the National Association of Greenkeepers of America

Published monthly at 405 Caxton Building, Cleveland, Ohio.

Contents copyright, 1932, by The National Greenkeeper, Inc., Publishers.

Entered as second-class matter, Aug. 25, 1928, at the post office, Cleveland, Ohio, under act of March 3, 1879

All Rights Reserved — None of the contents of this Magazine, either wholly or in part, may be reprinted without permission.

Contents

THE VITALITY OF SHADE TREES IN RELATION TO ROOT ENVIRONMENT <i>By Homer L. Jacobs</i>	5	IOWA GREENKEEPERS ORGANIZE <i>By Jack Welsh</i>	26
ECONOMY ON THE GOLF COURSE <i>By John Quail</i>	12	CANADIAN NEWS <i>By J. H. Evans</i>	27
SOIL STRUCTURE OF PUTTING GREENS <i>By Kenneth Welton</i>	19	PACIFIC COAST GOSSIP <i>By Arthur Langton</i>	28
FRED BURKHARDT SAYS.....	24	MINNESOTA GOSSIP <i>By H. E. Stodola</i>	29
TRI-STATE GOSSIP <i>By John Quail</i>	25	MID-WEST NOTES <i>By C. E. Tregillus</i>	30
CLEVELAND DISTRICT NEWS <i>By Walter E. Knoules</i>	25	PHILADELPHIA NEWS <i>By M. E. Farnham</i>	31
		MARKET PLACE AND BUYERS' GUIDE.....	32

Officers---National Ass'n of Greenkeepers of America

John Morley, President
Youngstown Country Club
2248 Selma Avenue
Youngstown, Ohio

John MacGregor, Vice-President
Chicago Golf Club
P. O. Box 717
Wheaton, Illinois

John Quail, Pittsburgh, Penna.
Wm. Sansom, Toronto, Ontario, Can.

TRUSTEES

Joseph Williamson, Chairman,
Columbus, Ohio, (1 year)
John Pressler, Pittsburgh, Penn., (2 years)
Grange Alves, Cleveland, Ohio, (3 years)

DIRECTORS

John Anderson, West Orange, N. J.
Carl Bretzlaff, Indianapolis, Indiana
Edward B. Dearie, Chicago, Ill.
M. E. Farnham, Philadelphia, Penna.
Leo J. Feser, Wayzata, Minn.

Fred A. Burkhardt, Sec'y.-Treas.
Westwood Country Club
Box "A"—Rocky River Sta.
Cleveland, Ohio

DISTRICT VICE PRESIDENTS

ELMER F. AFFELDT, Engineers' Country Club, Roslyn, Long Island, New York.
A. E. ARNOLD, Masonic Country Club, Grand Rapids, Michigan.
C. J. AUGUSTO, Del Monte Country Club, Del Monte, Calif.
G. W. BARNES, Banff Springs Golf Course, Banff, Alberta, Canada.
C. G. BARTON, Sylvania Golf Club, Toledo, Ohio.
ALEX BINNIE, Shoresides Golf Club, Lake Bluff, Ill.
JAMES BOLTON, Berkshire Country Club, Reading, Pennsylvania.
MICHAEL BISSEL, Montclair Golf Club, Montclair, New Jersey.
ALEX BOYD, Rainier Country Club, Seattle, Washington.
A. L. BRANDON, Saint Charles Country Club, Saint Charles, Illinois.
PAUL BROCKHAUSEN, New Blue Mound Country Club, Wauwatosa, Wisconsin.
THOMAS BRYDON, Kahkwa Country Club, Erie, Pennsylvania.
J. O. CAMPBELL, Wethersfield Country Club, Hartford, Connecticut.
JAMES CONNAUGHTON, Monroe Golf Club, Pittsford, New York.
CARL DAVIS, Moonbrook Country Club, Jamestown, New York.
E. F. DAVIS, Meadville Country Club, Meadville, Pennsylvania.
M. L. DePARIEN, Gulf Stream Golf Club, Delray Beach, Florida.
THOS. E. DOUGHERTY, Springhaven Country Club, Chester, Pennsylvania.
GORDON W. EARL, Ogdensburg Country Club, Ogdensburg, New York.
CHARLES ERICKSON, Minikahda Club, Minneapolis, Minnesota.
FRANK W. ERMER, Ridgewood-Willick Golf Clubs, Cleveland, Ohio.
LEWIS M. EVANS, Tam O'Shanter Golf Club, Canton, Ohio.
O. E. EVANS, Country Club, Yorktown, Virginia.

R. E. FARMER, Brynwood Country Club, Milwaukee, Wisconsin.
D. ALLEN FRASER, Berkshire Hunt and Country Club, Lenox, Mass.
FORD GOODRICH, Flint Country Club, Flint, Michigan.
JACK GORMLEY, Van Schiaek Island Country Club, Cohoes, New York.
JOHN GRAY, Essex Golf and Country Club, Sandwich, Ontario, Canada.
J. E. HAMMER, JR., Memphis Country Club, Memphis, Tennessee.
HARRY HANSON, Maple Bluff Country Club, Madison, Wisconsin.
H. HAWKINS, Lakeview Golf Club, Port Credit, Ontario.
ROBERT HENDERSON, Country Club of Buffalo, Williamsburg, N. Y.
G. HOLMQUIST, Fort Wayne Country Club, Fort Wayne, Indiana.
FRANK J. HOSNER, Glendale Golf and Country Club, Saginaw, Michigan.
ARTHUR J. JENSEN, Fargo Country Club, Fargo, N. D.
CHAS. S. KESSELRING, Moundsville Country Club, Moundsville, West Virginia.
FRED LARRENCE, Deal Golf Club, Oakhurst, New Jersey.
M. W. LAWRENCE, West End Country Club, New Orleans, Louisiana.
GEORGE LIVINGSTONE, Bell Meade Country Club, Nashville, Tennessee.
HUGH LUKE, Garden City Country Club, Garden City, New York.
SAMUEL LYLE, North Hills Country Club, Ferguson, Missouri.
JEROME MACDONALD, Palmetto Golf Club, Aiken, South Carolina.
TOM K. McCLENAHAN, Mayfair Golf and Country Club, Edmonton, Alberta, Canada.
JOE P. MAYO, Pebble Beach Country Club, Pebble Beach, California.
CHESTER MENDENHALL, Wichita Country Club, Wichita, Kansas.

T. H. RIGGS MILLER, Willow Brook Country Club, Staten Island, New York.
HUGH C. MOORE, St. Simon's Island Golf Club, St. Simon's Island, Ga.
JAMES MURDEN, Ridgewood Golf Club, Cincinnati, Ohio.
L. T. PARKER, Pasadena Golf Club, Pasadena, California.
WILLIAM E. PERKINS, Yale Athletic Ass'n., New Haven, Connecticut.
JOHN PIRIE, Whipoorwill Country Club, Chappaqua, N. Y.
CLARENCE PLOSS, Salem, Mass.
EDWIN O. PRATT, Mission Hills Country Club, Kansas City, Kansas.
ROBERT SCOTT, Baltimore Country Club, Baltimore, Maryland.
H. E. SHAVE, Oakland Hills Country Club, Birmingham, Michigan.
CLARENCE W. STROUSE, Highland Country Club, Grand Rapids, Mich.
DAVID TAIT, Northwood Country Club, Meridian, Mississippi.
RALPH THOMAS, Sandy Burr Country Club, Waltham, Massachusetts.
D. R. VALENTINE, Beaumont Country Club, Beaumont, Texas.
JOSEPH VALENTINE, Merion Cricket Club, Philadelphia, Pennsylvania.
TOM VARDON, Yacht Club, White Bear, Minnesota.
RICHARD WATSON, Chevy Chase Golf Club, Washington, D. C.
BONNIE WEAVER, Burlington Golf Club, Burlington, Iowa.
GEORGE WELLIN, Tumblebrook Country Club, New Britain, Conn.
JACK WELSH, Wakonda Country Club, Des Moines, Iowa.
SAM WHITING, Olympic Club, San Francisco, California.
WALTER WOODWARD, Senneville Country Club, Montreal, Quebec, Canada.
GROVER C. ZWEIFEL, Indian Hills Country Club, Catoosa, Oklahoma.