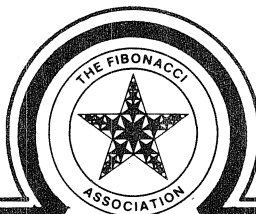


DALHOUSIE
LIBRARY
JUN 18 1982
SERIALS DEPT.

The Fibonacci Quarterly

THE OFFICIAL JOURNAL OF THE FIBONACCI ASSOCIATION

VOLUME 20
NUMBER 2



MAY
1982

CONTENTS

| | | |
|---|-------------------------------------|-----|
| Ducci Processes | <i>Fook-Bun Wong</i> | 97 |
| Minimum Periods Modulo n for Bermoulli Polynomials | <i>Wilfried Herget</i> | 106 |
| A Note on Fibonacci Primitive Roots | <i>Michael E. Mays</i> | 111 |
| A Property of the Fibonacci Sequences (F_m) , $m = 0, 1, \dots$ | <i>L. Kuipers</i> | 112 |
| Notes on Sums of Products of Generalized Fibonacci Numbers | <i>David L. Russell</i> | 114 |
| Binet's Formula for the Tribonacci Sequence | <i>W. R. Spickerman</i> | 118 |
| Pythagorean Triples | <i>A. F. Horadam</i> | 121 |
| Composition Arrays Generated by Fibonacci Numbers <i>V. E. Hoggatt, Jr., & Marjorie Bicknell-Johnson</i> | | 122 |
| The Congruence $x^n \equiv a \pmod{m}$, Where $(n, \phi(m)) = 1$, | <i>M. J. DeLeon</i> | 129 |
| On the Enumeration of Certain Compositions and Related Sequences of Numbers | <i>Ch. A. Charalambides</i> | 135 |
| A Generalization of the Golden Section | <i>D. H. Fowler</i> | 146 |
| The Fibonacci Sequence in Successive Partitions of a Golden Triangle | <i>Robert Schoen</i> | 159 |
| Geometry of a Generalized Simson's Formula | <i>A. F. Horadam</i> | 164 |
| An Entropy View of Fibonacci Trees | <i>Yasuichi Horibe</i> | 168 |
| Elementary Problems and Solutions | <i>Edited by A. P. Hillman</i> | 179 |
| Advanced Problems and Solutions .. | <i>Edited by Raymond E. Whitney</i> | 185 |

The Fibonacci Quarterly

Founded in 1963 by Verner E. Hoggatt, Jr. (1921-1980),
Br. Alfred Brousseau, and I.D. Ruggles

*THE OFFICIAL JOURNAL OF THE FIBONACCI ASSOCIATION
DEVOTED TO THE STUDY
OF INTEGERS WITH SPECIAL PROPERTIES*

EDITOR

Gerald E. Bergum

BOARD OF DIRECTORS

G.L. Alexanderson (President), Leonard Klosinski (Vice-President), Marjorie Johnson (Secretary),
Dave Logothetti (Treasurer), Richard Vine (Subscription Manager), Hugh Edgar and Robert Giuli.

ASSISTANT EDITORS

Maxey Brooke, Paul F. Byrd, Leonard Carlitz, H.W. Gould, A.P. Hillman, A.F. Horadam, David A.
Klarner, Calvin T. Long, D.W. Robinson, M.N.S. Swamy, D.E. Thoro, and Charles R. Wall.

EDITORIAL POLICY

The principal purpose of *The Fibonacci Quarterly* is to serve as a focal point for widespread interest in the Fibonacci and related numbers, especially with respect to new results, research proposals, and challenging problems.

The *Quarterly* seeks articles that are intelligible yet stimulating to its readers, most of whom are university teachers and students. These articles should be lively and well motivated, with innovative ideas that develop enthusiasm for number sequences or the exploration of number facts.

Articles should be submitted in the format of the current issues of the *Quarterly*. They should be typewritten or reproduced typewritten copies, double spaced with wide margins and on only one side of the paper. Articles should be no longer than twenty-five pages. The full name and address of the author must appear at the beginning of the paper directly under the title. Illustrations should be carefully drawn in India ink on separate sheets of bond paper or vellum, approximately twice the size they are to appear in the *Quarterly*. Authors who pay page charges will receive two free copies of the issue in which their article appears.

Two copies of the manuscript should be submitted to GERALD E. BERGUM, DEPARTMENT OF MATHEMATICS, SOUTH DAKOTA STATE UNIVERSITY, BROOKINGS, SD 57007. The author is encouraged to keep a copy for his own file as protection against loss.

Address all subscription correspondence, including notification of address changes, to SUBSCRIPTION MANAGER, THE FIBONACCI ASSOCIATION, UNIVERSITY OF SANTA CLARA, SANTA CLARA, CA 95053.

Annual domestic Fibonacci Association membership dues, which include a subscription to *The Fibonacci Quarterly*, are \$20 for Regular Membership, \$28 for Sustaining Membership I, \$44 for Sustaining Membership II, and \$50 for Institutional Membership; foreign rates, which are based on international mailing rates, are somewhat higher than domestic rates (please write for details). *The Quarterly* is published each February, May, August and November.

All back issues of *The Fibonacci Quarterly* are available in microfilm or hard copy format from UNIVERSITY MICROFILMS INTERNATIONAL, 300 North Zeeb Road, Dept P.R., ANN ARBOR, MI 48106.

1982 by

© The Fibonacci Association

All rights reserved, including rights to this journal
issue as a whole and, except where otherwise noted,
rights to each individual contribution.