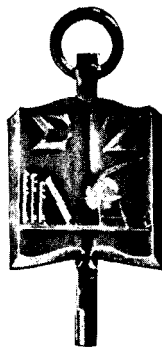


# THE SIGMA ZETAN



Volume XXXVI

April 1967 to April 1968

# THE SIGMA ZETAN

OFFICIAL ORGAN OF SIGMA ZETA



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BEATRICE EVANS

**A MESSAGE FROM THE PRESIDENT**

The enormous increase in college and university enrollment has paralleled the national population explosion. On large campuses departmental honor societies function well but unfortunately their national meetings have lost some of the atmosphere of former years.

Fortunately we belong to Sigma Zeta, an honorary society that is large enough to challenge local groups and broad enough to relate interdepartmental interests, yet small enough for us to share our enthusiasm for science and mathematics on a national scale.

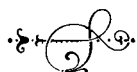
No organization can remain static. We are concerned over the loss of several chapters through lack of interest, overgrowth in population or lack of leadership. We need to inform other good science and mathematics departments of the merits of Sigma Zeta and offer them the privilege of joining us in maintaining a strong and growing society.

Our national convention is a challenging activity to which we look for fun, entertainment, and profitable experiences. We hope that each of you may have the privilege of attending at least one of our annual meetings.

We urge each member of Sigma Zeta to grasp the opportunity to participate in all of the activities of our society. As we initiate new members, let each of us review the purposes of Sigma Zeta and renew our pledge to this society.

**OUR NATIONAL OFFICERS 1967-1968**

- National President.....Beatrice Evans
- National Vice-President.....N. A. Schappelle
- National Recorder-Treasurer.....Kenneth E. Cook
- National Historian.....Fred A. Fleming
- National Editor.....James W. Drenan
- National Past President.....Thomas R. Mertens



**THIRTY-SEVENTH NATIONAL CONVENTION**

**PROCEEDINGS OF THE NATIONAL COUNCIL OF SIGMA ZETA  
MARCH 31, 1966**

The National Council of Sigma Zeta was called to order by Sister Elizabeth Anne, the National President, at 8:45 p.m. in Science Hall of Indiana Central College in Indianapolis, Indiana.

The minutes of the 36th annual meeting were distributed and approved for transmission to the convention session for final approval by the delegates. Two financial reports were presented by the National Recorder-Treasurer. One was the fiscal year report for September 1, 1964 through August 31, 1965. The second was the interim report for the year to date, from September 1, 1965 through March 31, 1966. Both reports were accepted by the National Council. (The second report, when brought up to date through August 31, 1966, constitutes the fiscal year report for publication in *The Sigma Zetan*.) A copy of the financial report is appended as an official portion of these minutes.

Discussion was held concerning the appointment of convention committees. The names of the student and faculty delegates appointed are listed in the convention minutes.

The group discussed a matter which had been brought up for the previous year—that of having representatives of Sigma Zeta visit the various chapters. Sister Elizabeth Anne suggested that a list of available visitors and speakers be kept in the national office and that a chapter could write for information about persons and topics available. Dr. Drenan pointed out that while such speakers might receive no stipend, they should be paid at least some of their expenses. Dr. Brooker suggested that the \$2000 in the savings account, or a portion of it, should be used for expenses for traveling speakers. Dr. Brooker was appointed by the president to investigate such possibilities.

Mr. Deal announced that the press of professional obligations had become so great that he felt he should announce his resignation as National Recorder-Treasurer. The resignation was accepted by the National Council.

The problem of communication between and among the various chapters and the national office was discussed. It was pointed out that as new faculty members become associated with Sigma Zeta, it becomes necessary to spark enthusiasm for the organization in them. It was suggested that a single meeting of the National Council each year at the annual meeting was perhaps inadequate for the transaction of the business of the Society, and perhaps consideration should be given to an interim meeting of the National Council in the autumn of each year.

The National Vice President, Dr. Mertens, indicated his concern for the growth of Sigma Zeta. As institutions become larger, they will lose chapters of Sigma Zeta and develop honoraries for the various disciplines, which as he pointed out, is quite proper and desirable. But there are many smaller institutions which Sigma Zeta was designed for, and we need to locate those colleges and inform them of what Sigma Zeta can do for them. No further business appearing, the National Council adjourned at 9:50 p.m.

**MINUTES OF THE THIRTY-SEVENTH ANNUAL CONVENTION  
OF SIGMA ZETA  
APRIL 1-2, 1966**

The thirty-seventh annual convention of Sigma Zeta Honorary Science Society was called to order by National President Sister Elizabeth Anne at 9:00 a.m. in the Science lecture Room of Lilly Science Hall on the campus of Indiana Central College, Indianapolis, Indiana. She turned the meeting over to Richard Rodebaugh, president of Rho Chapter, who welcomed the delegates. Mr. Rodebaugh in turn introduced Dr. Robert E. Cramer, Academic Dean of Indiana Central College, who spoke for President Esch who

was unable to be present. Dean Cramer welcomed the group, and spoke of the dual role which scientists must play, not only as scientists but also as artists in the continuing dialogue between the sciences and the humanities.

Dr. Thomas R. Mertens, National Vice President, responded for Sigma Zeta, expressing appreciation for Indiana Central College's red carpet treatment of their guests.

Duane E. Deal, National Recorder-Treasurer, presented the minutes of the 36th annual convention of 1965, along with the financial statements. Dr. Mertens (Xi) moved their acceptance, Dr. Drenan (Pi) seconded, and the motion was carried.

The official roll call of the chapters was read by Mr. Deal:

| Chapter     | Student Delegates | Faculty Delegates |
|-------------|-------------------|-------------------|
| Beta        | 2                 | 1                 |
| Gamma       | 0                 | 0                 |
| Delta       | 0                 | 0                 |
| Epsilon     | 5                 | 0                 |
| Zeta        | 3                 | 1                 |
| Kappa       | 0                 | 0                 |
| Lambda      | 0                 | 0                 |
| Mu          | 0                 | 0                 |
| Nu          | 4                 | 2                 |
| Xi          | 8                 | 3                 |
| Pi          | 1                 | 1                 |
| Rho         | 22                | 2                 |
| Sigma       | 4                 | 1                 |
| Tau         | 5                 | 1                 |
| Upsilon     | 7                 | 2                 |
| Phi         | 0                 | 0                 |
| Psi         | 1                 | 0                 |
| Omega       | 3                 | 0                 |
| Alpha Alpha | 0                 | 0                 |
| Alpha Beta  | 4                 | 2                 |

Sister Elizabeth Anne gave her report as National President. She noted that she had written the several chapters a number of letters, and had worked with the host chapter in planning the convention. On her election last April she had asked information from the various chapters concerning their variations in initiation ceremonies. In one letter she sent out the "official standard" ceremony and requested suggestions for improvements. She had later appointed Arlene Foley to work on a revised set of ceremonies, and it would be

left to the pleasure of the convention as to whether or not to adopt them. In another connection, she had sent out to the chapters a list of suggested activities, which she hoped might broaden the experience of membership in Sigma Zeta. She had also initiated the looking into alumni activities, so that the national office would have a record of the graduate work of members, etc. She felt if the chapters could assist in keeping these records, they might be beneficial to all.

Dr. Thomas R. Mertens, National Vice President, reported on his activities in that office. He also was concerned with the need for expansion of Sigma Zeta via the creation of additional chapters. He noted that Sigma Zeta was intended for smaller campuses, and as institutions grow Sigma Zeta declines in importance on those campuses. Hence the need for placing the organization on additional campuses of smaller size.

Dr. James W. Drenan, National Editor, announced that the *Sigma Zetan* is in press, and should be mailed out by the end of April. He said he would like to hear from each chapter as to how many copies were needed. He also made the perennial request for information from the chapters as to their activities, for inclusion in the journal.

Mr. Deal made several announcements and stated some of the activities of the national office for the past year. He also announced that he had tendered his resignation to the National Council on the previous evening.

Sister Elizabeth Anne announced the appointment of the following convention committees:

Founders Cup Committee—Sister Elizabeth Anne (National President), Duane E. Deal, (National Recorder-Treasurer), and Richard Rodebaugh (Rho).

Auditing Committee—Larry L. Schoch (Zeta), Dennis Shaw (Alpha Beta), and Howard W. Gould (Nu).

Nominating Committee—James E. Beach (Nu), James W. Drenan (Pi), Larry Swift (Rho), and Darlene Sayers (Upsilon).

Resolutions Committee—Kathleen Schmidt (Sigma), Bettina Basham (Alpha Beta), Carol Wilson (Omega), and Kenneth E. Cook (Upsilon).

Ritual Committee—Arlene F. Foley (Upsilon), Claire Wittenmeier (Sigma), Lee Neumeier (Zeta), and Gilbert W. Faust (Zeta).

Margaret Wright, convention coordinator for Rho Chapter, made a series of announcements concerning the convention arrangements, the business meeting, the field trip in the afternoon, and so on.

After a short coffee break, Sister Elizabeth Anne turned the meeting over to Sue Herrick, Secretary-Treasurer of Rho Chapter, who introduced the following papers:

Edward J. Brandel (Epsilon)—The Inheritance of Dimorphic No. 16-Chromosome in Man

Darlene Sayers (Upsilon)—Histocytochemical Study of the Thymus

Richard Rodebaugh (Rho)—Spectrochemical Consideration of the Principal of Continuity of States

Harry F. Baney (Xi)—The Effect of a Five Per Cent Diet of Calcium Cyclohexysulfamate on the Growth Rate of Weanling Rats

Dr. Robert M. Brooker (Rho) spoke to the group, telling something of the Allison Division of General Motors to which the field trip of the afternoon was planned. He also made a number of suggestions to the students in attendance, suggesting that they talk as much as possible with one another, particularly with students they did not know from other campuses, and broaden their horizons by comparing campuses, teachers, courses, and educational programs.

The morning session adjourned at 11:45 a.m. After lunch the field trip to the Allison Powerama took up the afternoon. In the evening the convention banquet was held in the North Dining Room of the Academic Building, with Dr. Robert Kryter speaking on "The Challenges of the Space Age."

The second session of the convention was called to order by the National President at 8:05 a.m. The following student papers were presented, in two simultaneous sessions:

Valerie J. Mills (Tau)—The Effect of Radiation on Genes

Barbara Kuhns (Pi)—Interpretation of Experimental Data

Susan Merrick (Rho)—The Function of a Siphon in a Vacuum

Linda Butler (Pi)—Mannich Reactions with Resorcinol

Tom Cheatham (Alpha Beta)—Modern Man's Mathematics

Judy M. Nicholson (Rho)—The Albino Factor in Mice

Aurita Perez (Sigma)—Virus Isolates

Tim T. Schowalter (Psi)—The Paleontology of the Wier Tebo, and Scammon Formations

Charles W. Miller (Xi)—A Comparison of Two Methods of Forecasting the Weather

Allen J. Reichenbach (Tau)—Cube Roots

Claire Wittenmeier (Sigma)—The Effect of Ultraviolet Radiation on Bacteria

Alberta Zalima (Tau)—Influence of Various Chemical Factors on Cytoplasmic Streaming in Elodea

Vickie Ann Perez (Sigma)—Chromatographic Evaluation of Cactaceae Genera

The business session was called to order by Sister Elizabeth Anne at 10:20. There was no decision concerning the invitation for the 1967 annual meeting, and Sister announced that a decision will be delayed until later.

Dr. Howard W. Gould (Nu) reported for the Auditing Committee, which had found the books and accounts to be in order. Elizabeth Griffin (Beta) seconded Dr. Gould's report, which was accepted.

Arlene F. Foley reported for the Ritual Committee. The recommendation of the committee follow:

This committee recommends the continued use of the ritual formulated in 1947 as a basic format. However, we are editing and rephrasing certain sentences. Copies of these will be mailed to each chapter before this semester ends by Mrs. Foley. Following the initial mailing, copies may be obtained from the National Recorder-Treasurer.

The committee is also editing a short ritual for Association Members, quite similar to the one used in Upsilon Chapter. These will be available at the same time as the ritual for active members.

Officer Installation: The committee recommends that each chapter continue with its present program or modify locally if it so desires. Some schools do formally install officers. At the other chapters, election to office by voting puts the officer into office.

Gilbert W. Faust (Zeta) seconded Mrs. Foley's report, which was accepted.

Kathleen Schmidt (Sigma) presented the report of the Resolutions Committee, which was seconded by Tom Cheatham (Alpha Beta) and accepted. The report is as follows:

Be it resolved that Sigma Zeta expresses its gratitude to Dr. Robert Brooker, sponsor; to Mr. Richard Rodebaugh, president; and to Miss Peggy Wright, coordinator, all of Rho Chapter and Indiana Central College, for the hospitality and thoughtful planning of the activities that have made our visit so pleasant. Be it further resolved that Sigma Zeta extends hearty thanks to Prof. Duane E. Deal for his seven years of service as National Recorder-Treasurer.

Richard Rodebaugh (Rho), representing the winner of the Founders Cup in 1965, presented the cup to Xi Chapter for 1966 in recognition of their many contributions to Sigma Zeta. Paula Lovelace accepted the Xi Chapter.

Dr. Mertens presented the Sigma Zeta Honor Awards to the recipients, Tim Schowalter (Psi), Karlyn Wilcox (Tau), Tom Cheatham (Alpha Beta). Arlene Foley also presented, on behalf of the National Council, the Sigma Zeta Honor Award to Dr. Howard W. Gould in recognition of his many, many years of service to Sigma Zeta.

Larry Swift presented the report of the Nominating Committee, which was seconded by Charles Miller (Xi). The following slate of officers was presented:

- National President—Thomas R. Mertens (Xi)
- National Vice President—Beatrice Evans (Alpha Beta)
- National Recorder-Treasurer—Kenneth E. Cook (Upsilon)
- National Editor—James W. Drenan (Pi)
- National Historian—Fred A. Fleming (Beta)
- National Past President—Sister Elizabeth Anne (Sigma)

William E. Eden (Tau) moved to close nominations. After seconding by Jan Carrick Morehouse, (Xi), the motion passed. Dr. Brooker moved that the secretary be instructed to cast a unanimous ballot for the slate. Paula Lovelace (Xi) seconded the motion, which carried.

Sister Elizabeth Anne passed the gavel to Dr. Mertens, first expressing appreciation to all for coming to the convention. She noted all the work which had gone into the meeting, the fine student papers which had been presented, and noted also that it had been a great pleasure to work for Sigma Zeta.

Dr. Mertens introduced the other national officers, who each said a few words of appreciation. A motion for adjournment was made by Dr. Beach (Nu) and seconded by Sue Merrick (Rho). The motion passed and the thirty-seventh annual convention of Sigma Zeta was closed.

Duane E. Deal  
Retiring National Recorder-Treasurer

REGISTRANTS

BETA CHAPTER

- \*Fred A. Fleming
- Elizabeth A. Griffin
- Richard W. Zeisset

EPSILON CHAPTER

- Doris Carter
- Ronald Pope
- Bernard Lallathin
- Barbara Paine
- \*Fred Worley
- Edward Bradel

ZETA CHAPTER

- Lee Neumeier
- \*Gilbert W. Faust
- Larry I. Schoch
- Harold Kluender

NU CHAPTER

- Barbara Allen
- Sherry Hallquist
- Richard Snyder
- Frank Haraf
- \*Howard W. Gould
- \*James E. Beach

XI CHAPTER

- Beverly Collier
- Jan Morehouse
- Harry Baney
- \*Homer D. Paschall
- \*Thomas R. Mertens
- \*Duane E. Deal
- Virginia Parsons
- Malcolm Stauffer
- Russell Ingram
- Charles W. Miller
- Paula D. Lovelace
- \*Malcom Hults

PI CHAPTER

- Linda Butler
- \*James W. Drenan
- David Clutts
- Sandy Pelehac
- Marilyn Thielsen
- Barbara Kuhns

SIGMA CHAPTER

- \*Sister Elizabeth Anne
- Kathleen Schmidt
- Claire Wittenmeier
- Aurita Perez
- Vickie Perez

TAU CHAPTER

- Karlyn Wilcox
- Valerie Mills
- Alberta Zalimas
- Nancy Efortensen
- \*William E. Eden
- Allan Reichenbach

UPSILON CHAPTER

- \*Marie Mayo
- Jerry Stevenson
- \*Kenneth E. Cook
- Thomas Henry
- Connie Herman
- \*Arlene F. Foley
- \*Geri Cahall
- Darlene Sayers
- Howard Stamm
- Jerry Jenkins
- Ed Weippert
- Bob Turner

PSI CHAPTER

- Tim T. Schowalter

OMEGA CHAPTER

- Carol Wilson
- Arlene Aaro
- Fran Adams

ALPHA BETA CHAPTER

- Bettina Basham
- Tom Cheatham
- \*William R. Boyd
- \*Beatrice Evans
- Jim Shaw
- Dennis Shaw

RHO CHAPTER

Mary Linn Gregory  
 Sue Findley  
 Pat Comer  
 Margaret Wright  
 Sue Merrick  
 Richard Rodebaugh  
 \*Robert M. Brooker  
 Morris Lewellyn  
 Phil Soper  
 Barbara Davis  
 Larry Swift  
 Carol Ann Lubker  
 Donald Tiano  
 Louise Yoh  
 Stan Adkins  
 Wayne Beck  
 John Steed  
 Joe Fulton  
 Bruce Quinn  
 Warren Temple  
 Larry White  
 Glenn Wiatt  
 Ron McClarnon  
 David Greenburg  
 \*Robert Kent  
 Steve Shoultz  
 Judy Nichol森  
 Dennis Stone  
 Juanita Ernst  
 Roseva Hughes  
 Jim Peck  
 Larry Darlage  
 Richard Seidel  
 Charles Ashbrook  
 Jeff Kellams  
 Thomas Tobey  
 Larry Davis  
 Mike Morris  
 Margaret Truesdale  
 Jeff Thompson  
 Joe Barnett

\*Faculty members

GUESTS

Virginia Sayers,  
 Indianapolis, Ind.  
 Grada Sayers,  
 Indianapolis, Ind.  
 Dr. Robert Cramer, Dean,  
 Indiana Central College  
 Dr. and Mrs. Robert J. Kryter  
 Mrs. Richard Rodebaugh,  
 Indianapolis, Ind.  
 Mr. and Mrs. William Gommel  
 Ronald Green

SIGMA ZETA HONORARY SCIENCE SOCIETY

Financial Report—September 1, 1965 - August 31, 1966

RECEIPTS

Membership Fees:

|             |        |
|-------------|--------|
| Beta        | \$ .00 |
| Gamma       | 165.00 |
| Delta       | 75.00  |
| Epsilon     | 95.00  |
| Zeta        | 75.00  |
| Kappa       | 217.00 |
| Lambda      | 61.00  |
| Mu          | 35.00  |
| Nu          | 100.00 |
| Xi          | 250.00 |
| Pi          | 75.00  |
| Rho         | 79.00  |
| Sigma       | 50.00  |
| Tau         | 52.00  |
| Upsilon     | 72.00  |
| Phi         | .00    |
| Psi         | 15.00  |
| Omega       | .00    |
| Alpha Alpha | 170.00 |
| Alpha Beta  | 9.00   |

\$ 1595.00

Jewelry Sales:

|             |          |
|-------------|----------|
| Beta        | \$ 25.00 |
| Gamma       | 140.25   |
| Zeta        | 28.07    |
| Nu          | 56.00    |
| Xi          | 62.74    |
| Tau         | 31.50    |
| Omega       | 20.60    |
| Alpha Alpha | 8.59     |
| Alpha Beta  | 16.48    |

\$ 389.23

Stationery ..... 3.00

Miscellaneous ..... 1.00

TOTAL RECEIPTS ..... \$ 1988.23



Financial Report—September 1, 1965 - August 31, 1966 (cont'd)

DISBURSEMENTS

|  |                   |
|--|-------------------|
| Printing <i>The Sigma Zetan</i> .....        | \$ 609.62         |
| Office Supplies .....                        | 117.12            |
| National President office expenses .....     | 13.89             |
| 1966 Convention Travel .....                 | 483.80            |
| Secretarial expense—editor .....             | 100.00            |
| Secretarial expense—recorder-treasurer ..... | 200.00            |
| 1966 officer convention travel .....         | 265.64            |
| Convention expenses—Rho Chapter .....        | 73.95             |
| Jewelry .....                                | 341.29            |
| Bank Service Charges .....                   | 1.07              |
| <b>TOTAL DISBURSEMENTS .....</b>             | <b>\$ 2206.38</b> |

FINANCIAL SUMMARY

|   |                   |
|---|-------------------|
| Balance on Hand, September 1, 1965 .....                            | \$ 2812.04        |
| Receipts as above .....   | 1988.23           |
| <b>Total Cash .....</b>   | <b>\$ 4800.27</b> |
| Disbursements* .....  | 2206.38           |
| <b>Balance .....</b>  | <b>\$ 2593.89</b> |
| Correction of bank error—<br>charged twice for printed checks ..... | 1.85              |
|   | \$ 2595.74        |
| Balance in checking account, August 31, 1966 ..                     | \$ 595.74         |
| Balance in savings account, August 31, 1966 ..                      | 2000.00           |
| <b>Balance on Hand, August 31, 1966 .....</b>                       | <b>\$ 2595.74</b> |

SIGMA ZETA DEVELOPMENT FUND

|   |                  |
|---|------------------|
| Balance on Hand, September 1, 1965 .....      | \$ 770.00        |
| Interest** .....                              | 183.99           |
| <b>Balance on Hand, August 31, 1966 .....</b> | <b>\$ 953.99</b> |

\* Includes two checks written in October, 1966

\*\* Includes interest through December 31, 1966

SIGMA ZETA HONORARY SCIENCE SOCIETY

Interim Financial Report—September 1, 1966 - August 31, 1967

RECEIPTS

Membership Fees: (Active + Associate + Faculty)

|                            |          |
|----------------------------|----------|
| Beta (8 + 0) .....         | \$ 50.00 |
| Gamma (54 + 0) .....       | 270.00   |
| Delta (16 + 7) .....       | 87.00    |
| Epsilon (8 + 0) .....      | 40.00    |
| Zeta (25 + 17 + 3) .....   | 142.00   |
| Kappa (25 + 0) .....       | 125.00   |
| Lambda (10 + 14) .....     | 64.00    |
| Mu (8 + 4) .....           | 44.00    |
| Nu (0 + 0) .....           | 00.00    |
| Xi (52 + 0) .....          | 260.00   |
| Pi (5 + 12) .....          | 37.00    |
| Rho (13 + 4) .....         | 69.00    |
| Sigma (12 + 5) .....       | 65.00    |
| Tau (14 + 10) .....        | 85.00    |
| Upsilon (14 + 6 + 1) ..... | 76.00    |
| Phi (10 + 13) .....        | 63.00    |
| Chi (12 + 0) .....         | 60.00    |
| Psi (24 + 0) .....         | 178.00   |
| Omega (6 + 3) .....        | 33.00    |
| Alpha Alpha (0 + 0) .....  | 00.00    |
| Alpha Beta (4 + 3) .....   | 23.00    |

\$ 1771.00

Jewelry Sales:

|               |        |
|---------------|--------|
| Beta .....    | 30.16  |
| Gamma .....   | 240.76 |
| Delta .....   | 10.30  |
| Zeta .....    | 43.26  |
| Mu .....      | 9.25   |
| Xi .....      | 59.12  |
| Rho .....     | 10.20  |
| Tau .....     | 31.50  |
| Upsilon ..... | 27.54  |
| Phi .....     | 14.82  |
| Omega .....   | 61.80  |

\$ 538.71

Stationery .....

2.00

**TOTAL RECEIPTS .....** \$ 2311.71

DISBURSEMENTS

|  |                   |
|--|-------------------|
| Printing the <i>Sigma Zetan</i> .....    | \$ 601.48         |
| Office Supplies .....                    | 101.21            |
| 1967 Convention travel .....             | 768.00            |
| 1967 Officer convention travel .....     | 352.00            |
| Convention expenses .....                | 121.61            |
| Secretarial expense—editor .....         | 100.00            |
| Secretarial expense—recorder-Treas. .... | 200.00            |
| Jewelry .....                            | 537.55            |
| Refunds on overpayments .....            | 42.00             |
| <b>TOTAL DISBURSEMENTS .....</b>         | <b>\$ 2823.85</b> |

FINANCIAL SUMMARY

|   |            |
|---|------------|
| Balance on hand, September 1, 1966 .....        | \$ 2595.74 |
| Receipts as above .....                         | 2311.71    |
| Total cash .....                                | 4907.45    |
| Disbursements .....                             | 2823.85    |
| Balance .....                                   | 2083.60    |
| <br>  |            |
| Balance in checking account, August 31, 1967 .. | \$ 583.60  |
| Balance in savings account, August 31, 1967 ..  | 1500.00    |
| Balance on hand, August 31, 1967 .....          | \$ 2083.60 |

SIGMA ZETA DEVELOPMENT FUND

|  |            |
|--|------------|
| Balance on hand, September 1, 1966 ..... | \$ 953.99  |
| Interest .....                           | 50.01      |
| Balance on Hand, August 31, 1967 .....   | \$ 1004.00 |

PROCEEDINGS OF THE NATIONAL COUNCIL OF SIGMA ZETA

APRIL 6, 1967

The National Council of Sigma Zeta was called to order by President Thomas W. Mertens at 8:00 p.m. at East Stroudsburg State College, East Stroudsburg, Pennsylvania.

The minutes of the 37th annual meeting were distributed. The minutes were amended to include the names of the recipients of the Sigma Zeta Hon-

or Award: Tom Schowalter, Psi; Karlyn Wilcox, Tau; Tom Cheatham, Alpha Beta.

Prof. Duane Deal distributed copies of the financial report for the fiscal year September 1, 1965 to August 31, 1966. An interim financial report for the period September 1, 1966 to April 5, 1967 was distributed by the recorder-treasurer. Both reports were accepted by the National Council. A copy of the financial report is appended as an official portion of these minutes.

Discussion was held concerning the appointment of convention committees. The names of the student and faculty delegates appointed are listed in the convention minutes.

The National President, Prof. Mertens, indicated his concern for the growth of Sigma Zeta. As institutions become larger, they will lose chapters of Sigma Zeta and develop honoraries for the various disciplines, which as he pointed out, is quite proper and desirable. Prof. Mertens agreed to present the problem to the convention business meeting.

Travel allowance was discussed, and it was decided to eliminate the maximum amount payable, subject to approval of the National Council. Prof. Evans moved and Prof. Edens seconded the motion: "Amounts in excess of \$100.00 are subject to confirmation by the National Council. In no case shall the total reimbursement (including other sources) exceed the total expenditure. Chapters are to be encouraged to seek other resources." The motion carried.

The meeting adjourned at 10:56 p.m.

Present at the meeting:

- Sister Elizabeth Anne (Past National President—Sigma)
- Kenneth E. Cook (National Recorder-Treasurer—Upsilon)
- Duane E. Deal (Retiring National Recorder-Treasurer—Xi)
- James W. Drenan (National Editor—Pi)
- William Eden (Tau)
- Beatrice Evans (National Vice President—Alpha Beta)
- Donald Fuller (Nu)
- Marie Mayo (Upsilon)
- Thomas R. Mertens (National President—Xi)
- Paul E. Osborne (Alpha Beta)
- N. A. Schappelle (Lambda)
- James Williamson (Nu)

## ABSTRACTS OF STUDENT PAPERS

**THE THERMOGENIC AND THERMOREGULATORY QUALITIES  
OF THE BROWN ADIPOSE TISSUE OF THE  
NEWBORN MAMMAL**

by *Ethel Mae Hiegel, Xi*

Newborn mammals face a cool environment for the first time at birth, yet they do not shiver. This is due to brown adipose tissue found in the interscapular and superior cervical regions of the newborn mammal, which has the ability to produce heat when the animal is exposed to cold. This tissue is also typical of hibernating animals.

To determine the function of brown adipose tissue, the following experiments were performed. One litter of newborn rabbits was kept at a reduced temperature (22°C.) and a second litter was kept at an elevated temperature (27°C.). At discrete intervals the brown adipose tissue was removed by dissection from one rabbit of each litter and the percentage of the weight of brown adipose tissue to body weight was found. In the litter kept at reduced temperature, the tissue was completely used up within 72 hours. In the litter kept at the higher temperature, a small amount of tissue still remained after nine days. These results indicate that one of the functions of brown adipose tissue is the production of heat for acclimation of the newborn to a colder environment.

To investigate the participation of brown adipose tissue in the response of the newborn rabbit to cold, temperature recordings were made with a thermistor which recorded on a physiograph. The brown adipose tissue of rabbits kept at environmental temperatures of 32°C. and 24°C. registered temperatures of 98°F. and 98.5°F., respectively. The brown adipose tissue of the rabbit kept at a reduced temperature of 7°C. reached a temperature of 104.5°F. These results indicate that the brown adipose tissue is induced to thermogenesis when the animal reaches a critically low body temperature, in an attempt to raise the internal body temperature of the animal.

**LOSS OF CHROMOSOMES AND NONDISJUNCTION  
INDUCED BY CAFFEINE IN DROSOPHILA**

by *Jeanne E. Mittler, Nu*

In an attempt to ascertain the effect of caffeine upon chromosome breakage and loss in *Drosophila*, a stock in which the male possessed a ring,  $x^{C2}$  chromosome bearing  $y^B$  and  $Y$  chromosome containing  $sc^8y^+$ , was reared on 0.123% caffeine. This was the maximum amount of caffeine that would per-

mit the *Drosophila* to complete the life cycle and delayed the emergence of adults by an additional 7 days at 24°C. The males which emerged were mated to  $y^w f$  and the offspring were normally  $y^B$  females and  $y^+$  males. The exceptional  $XO$  males  $y^w f$ , resulted from a loss of the  $X$  or  $Y$  chromosome. Exceptional females,  $y^+B$ , indicated that nondisjunction occurred between the  $X$  and  $Y$  chromosome in the male spermatogenesis. A significant increase was found in both chromosome loss and nondisjunction among the offspring of males who had been reared on caffeine. In another series of experiments the  $X^{C2} y^B$  adult males were fed for 48 hours on 0.123% caffeine media and mated every two days. By this brood method the breakage of the ring chromosome was induced by caffeine in those cells that were in early spermatid stage or had just completed meiosis.

**A PRELIMINARY INVESTIGATION INTO THE EFFECTS OF  
ESTROGENS ON MIGRAINE HEADACHES**

by *David Clutts, Pi*

The initial investigation was prompted by the author when severe migraines, which he had experienced for two years, were absent after a period during which milk ingestion was reduced to zero. At a subsequent time, milk was consumed normally for a period of five days, after which the migraines recurred for approximately two weeks. A statistical survey was taken of 450 Millikin University students concerning the frequency and occurrence of migraines related to the ingestion of milk, but the results were not numerous enough to be conclusive. A preliminary review of literature revealed that estrogens have been connected with migraines in the administration of some oral contraceptives. Estrogens in excess are believed to be diabetogenic, to contribute to hyperlipemia and hypercholesterolemia, to upset the balance of salt and water retention of the tissues, and to influence the maintenance of a positive calcium balance in bone tissue. Some sources report that biologically produced estrogens are inactive orally, and others are noncommittal; but numerous orally active synthetics have been produced. The results of this investigation are not conclusive, and research is being continued.

**A TECHNIQUE FOR CHROMOSOME ANALYSIS**

by *Mary Anne Wight, Sigma*

The purpose of this paper is to report on the chromosome studies on three mammalian cell lines. Monolayers of cat kidney, mouse lung, and baboon lung cells were grown in appropriate tissue culture fluid in bottles and on cover slips in Leighton tubes. The mitotic sequence of tissue subcultures

was determined by periodically staining normal cells. Such procedures indicated the peak of cell division.

The concentration of colchicine was altered to establish its optimal mitotic sequence interference at the metaphase stage with a minimal toxicity to the cell. After subsequent alterations, a final concentration (.0004%) was used. The incubation period with colchicine was varied to determine the time at which well separated metaphase chromosomes could be obtained.

In this method cells were fixed and stained without being detached from the glass surface on which they were grown. Degrees of hypotonicity were tested, and best results were obtained using distilled water.

In addition to the application of conventional methods, a procedure used with leukocytes was adapted to these cells. The fixed cells were flamed to enhance chromosome spread.

The treated cells were air dried, and stained with acridine orange (.01%). Stained slides were observed with a fluorescent microscope and photographed. Chromosome karyotypes were then determined.

When surveying slides for chromosome numbers, 100 fields per slide were studied, using at least 8 slides per preparation.

Baboon lung cells were prepared for treatment 10 times, and a chromosome count of 40 was obtained.

Cat kidney cells were prepared for treatment 3 times, and a chromosome count of 38 was obtained.

Mouse lung cells were prepared for treatment 3 times, and a chromosome count of 40 was obtained.

According to Makino, Darlington, and other sources, chromosome numbers agreed with those reported: 38 for cat (*Felis maniculata*); 40 for mouse (*Mus musculus*). The experimental determination for baboon cells (40) did not agree with the modal chromosome number of 42 reported by the same workers for the baboon (*Papio sp.*). Discrepancies may be attributed to loss of chromosome complements in the staining procedure.

### AN INEXPENSIVE, LOW-VOLTAGE PAPER STRIP ELECTROPHORESIS APPARATUS

by Larry J. Darlage, Rho

The design and construction of a low-voltage electrophoresis apparatus from standard laboratory equipment and some inexpensive material are described. The equipment was used to separate a mixture of amino acids consisting of glycine, arginine, and aspartic acid. All conditions except the pH

of the electrolytic solution were held constant, and the separation was again observed and compared to the previous one. The basis of the various migration rates of the ions, and some of the problems involved in electrophoresis are also discussed. The results obtained could be used to identify the amino acids and were reproducible within the limits of experimental error.

### A HISTOCHEMICAL STUDY OF THE PANCREAS

by Martha Oliver, Upsilon

The pancreas is a very complex organ made up of both exocrine and endocrine gland cells. A study of these gland cells is aided greatly by the use of special histochemical techniques differentiating the different kinds of cells and their structural features. By the use of techniques such as Masson's Trichrome, Mallory's Triple Stain, Periodic Acid Schiff, Oil Red O, Bielschowsky-Foot and Acridine Orange, the structure and function of the cells of the pancreas can be studied more completely and accurately.

With these techniques one can observe microscopic functional components such as the acinar cells with zymogen granules, the centroacinar cells, and the islets of Langerhans with alpha, beta and delta cells. I was not able to observe any C-cells and their presence in the human pancreas is questionable. I was able to observe delta cells whose presence has sometimes been questioned.

At present, much more is known about the structure of the pancreas than is known about its function. However, both areas need further study and investigation as illustrated by the controversy over the presence of C-cells in the islets of Langerhans in the human pancreas.

### EFFECTS OF CHEMICAL CARCINOGENS ON MICROORGANISMS

by Constance LaFont, Upsilon

An attempt was made to induce mutation by the use of 3-methyl-cholanthrene (3-MCA) in *E. coli*. The purpose of this experiment was to develop a model system for study of chemical carcinogenesis using 3-MCA since this is a known chemical carcinogen in mammals. Previous experiments employing chemical carcinogens (5-fluoro-2-deoxyuridine, 5-fluorouracil, urethane and copper sulfate) showed changes in respiratory enzymes and nucleic acids. In the experiments with 3-MCA no biochemical changes were detected but some colony characteristics were changed.

### VANILLIN, CIS-TERPIN HYDRATE AND CIS-TERPIN AS ICE NUCLEATORS

by Veronica M. Krupinski, Tau

A study of several crystalline organic compounds classified as essential oils was made concerning the effects of these compounds as ice nucleators. Slightly acidic pH conditions were employed.

Five substances were studied with a soap film detector: 1) vanillin recrystallized from water; 2) vanillin recrystallized from ethanol; 3) sublimed vanillin; 4) cis-terpin hydrate recrystallized from elixir of terpin hydrate; 5) sublimed cis-terpin. A glass slide indicator was used with cis-terpin hydrate recrystallized from elixir of terpin hydrate.

Each substance was introduced as a cloud of tiny crystals in the cold box. Ice crystals were immediately formed and observed on the soap film or glass slide when the threshold temperature of the compound was reached.

The following data were observed:

| Substance   | Threshold Temperature (°C) |
|---|----------------------------|
| Vanillin recrystallized from water                              | -4.78 <sup>a</sup>         |
| Vanillin recrystallized from ethanol                            | -6.43 <sup>a</sup>         |
| Sublimed vanillin   | -9.43 <sup>a</sup>         |
| Cis-terpin hydrate recrystallized from elixir of terpin hydrate | -3.70 <sup>a</sup>         |
|   | -6.25 <sup>b</sup>         |
| Sublimed cis-terpin   | -2.66 <sup>a</sup>         |

<sup>a</sup>Soap film detector

<sup>b</sup>Glass slide detector

Theoretically, minute traces of these essential oil compounds in the atmosphere may cause ice nucleation.

### THE MATHEMATICS OF BEAUTY IN NATURE AND ART

by Janet Andraski, Tau

Although the worlds of mathematics and aesthetics seem to bear no direct relationship to one another, a consideration of the role of mathematics in nature and art will make the link more credible.

Nature's delight in geometric shapes and in intricate mathematical designs is evidenced by the hexagons in snowflakes, the cubes in mineral crystals, the spirals in nautilus shells and animal horns.

The spirals of the florets of a daisy, the scales of pine cones, the bumps of pineapples occur in ratios which are portions of the sequence of numbers (discovered by Leonardo da Pisa) known as the Fibonacci numbers.

The ratio between any two adjacent numbers is about 1:1.62. Now this is also the ratio of the Golden Section which is related to man's art and architecture. The Golden Ratio is an aesthetic phenomenon because it has been shown that this ratio is more pleasing than any other ratio of inequality or asymmetry.

Examples of architecture which fit into the Golden Rectangle are the Parthenon and contemporary homes designed by LeCorbusier; it can be pointed out in the paintings of Leonardo da Vinci, Seurat and Mondrian.

Symmetry is another important aspect of nature and art which bears a relationship to mathematics. Whether in the vaguest or strictest sense of the word, symmetry is seen in the art of all periods of time.

### A DISCUSSION PERTAINING TO THE CLASSIC RESEARCH REGARDING CELLULAR GROWTH COORDINATION IN PLANT TISSUES

by Paul Berguson, Lambda

The growth of an organism is much more involved than simple accretion of layers of cells about a nucleus of primary cells. Mitosis is naturally the builder in the process, but random mitosis, uncontrolled and uncoordinated, is most assuredly a harmful condition in any tissue. Obviously, there has to be some form of a coordination system involved. Something must trigger cells to multiply, and then even more important, something must control their division, and sometimes even stop it.

The mechanism involved in the growth of living tissues has always been of prime interest among scientists. Much speculation and research over the years has established definite theories as to cellular growth. Since the publication in 1881 of Charles Darwin's book *The Power of Movement in Plants*, wherein the first rudimentary advances in the field were discussed, astounding progress has been accomplished in the field.

The early workers in this field (e.g. Fitting, Boysen, Jensen, Loeb, and Went) worked in an unbelievable void of knowledge. Their work is to be praised for its originality, and their fine examples of scientific method can serve as an example to all scientists.

**VIRUS REPLICATION***by Nora Lugo, Sigma*

A comparative study of the replication of enteroviruses SV-45, SV-47 and adenovirus A-153 in mouse fibroblasts (L-cells) and baboon embryonic lung (BEL) cells was made.

The cells were grown in Leighton tubes using Hank's Growth Medium for L-cells and Human Amnion Growth Medium for BEL cells. At 24 hour intervals, the cells were stained with either acridine orange or methyl green-pyronin. Cells stained with acridine orange were examined with a fluorescent microscope and photographed. The DNA fluoresced a bright yellow to yellow green and the RNA a bright red. Cells stained with methyl green-pyronin were examined with a light microscope. The DNA appeared green and the RNA a pink-violet.

Cells infected with SV-45 and SV-47 showed an increase of RNA in the nucleus and cytoplasm as viral RNA and protein were synthesized. Inclusion bodies which fluoresced a bright red with acridine orange and pink-violet with methyl green-pyronin were observed in the granular cytoplasm. With virus release rounding and shrinking were observed resulting in degeneration of the cytoplasm with a decrease in cellular mass until only a pyknotic nucleus and an inclusion remained.

Cells infected with A-153 demonstrated an increase in DNA in the nucleus during viral DNA synthesis. The nucleus underwent transformation becoming granular with the nuclear membrane invaginating while the chromatin organized to form rosettes showing multiloculated vesicles. In the final stages of an intranuclear inclusion which appeared green with both stains was formed. It was surrounded by a zone of rarefied nucleoplasm (halo). Syncytial formation by which virus transfer from cell to cell is accomplished was observed.

**COMPARISON AND CORRELATION OF RESULTS OBTAINED FOR THE LINEAR ABSORPTION COEFFICIENT OF GAMMA RAYS BY TWO SLIGHTLY DIFFERENT METHODS**

*by Donald E. Tiano, Rho*

A discrepancy which results when two slightly different experimental techniques are used to determine linear absorption coefficients of gamma rays was investigated. The discrepancy is shown to be almost entirely dependent upon the variation of the distance of the counter from the source in the two methods. A correction factor for the variation of counter-source distance was empirically determined and applied to the results. The application of the correction factor appears to produce an acceptable correlation between the results of the two methods.

**PREPARATION AND STUDY OF THE OCTACYANO COMPLEXES OF GROUP VIB***by Judy Varga, Sigma*

A project was undertaken to synthesize a compound containing a stable complex ion in which the central metal ion is coordinated with the maximum of eight ligands.

The  $[\text{Mo}(\text{CN})_8]^{4-}$  and  $[\text{W}(\text{CN})_8]^{4-}$  ions have been reported. Furman and Miller's synthesis of  $\text{K}_4[\text{Mo}(\text{CN})_8]$  (*Inorganic Syntheses*, 3:160-3.) and Heintz and Stratton's synthesis of  $\text{K}_4[\text{W}(\text{CN})_8]$  (*Inorganic Syntheses*, 7:145-8.) were tried.  $\text{K}_4[\text{Mo}(\text{CN})_8]$  was more readily prepared.

Synthesis of  $\text{K}_4[\text{Mo}(\text{CN})_8]$  by reduction in the dry state of  $\text{K}_2\text{MoO}_4$  (2 moles) by  $\text{NH}_2\text{OH}\cdot\text{HCl}$  (4 moles) in presence of KCN (4 moles) followed by addition of slight excess of KCN under oxidizing conditions was also tried but did not prove feasible.

Color changes of aqueous solutions of  $\text{K}_4[\text{Mo}(\text{CN})_8]$  upon exposure to sunlight reported by Jakob (*Roczinki Chemii*, 36:593-600.) and Olsson (*Chemical Abstracts*, 14:2307-8.) were checked out. An acidic solution begins yellow and turns brown, then greenish-yellow; neutral solution, yellow, red-brown, yellow, yellow-green, red-violet; basic solution, yellow, violet, blue. All photo-effects except the final color of acidic and neutral solutions were observed. In all cases, solutions were exposed only to sunlight. Substitutions of Cr, the third member of Group VIB, by a modified Furman and Miller method, seems to yield yellow  $\text{K}_4[\text{Cr}(\text{CN})_8]$ :

Dissolve  $\text{K}_2\text{CrO}_4$  in aqueous KOH, add concentrated HCl, and heat. Add KSCN, heat 2 hrs. on hotplate, and filter. Add pyridine, cool, decant supernatant liquid, and wash with water. Add KCN, heat 1½ hrs. on hotplate while passing air through and stirring frequently, filter, and evaporate filtrate halfway. Cool till crystals form and isolate amber crystals. Purify by redissolving crystals in hot water, treat with decolorizing charcoal, and add 1-2 volumes ethanol to filtrate. Cool till crystals settle out, isolate yellow crystals, and wash with ethanol and ether.

**GAS CHROMATOGRAPHY***by Barbara Michaels, Tau*

Gas chromatography is the physical separation of mixtures of volatile liquids in which the components to be separated are distributed between two phases: a stationary bed of large area and a liquid phase that percolates through this stationary phase. The sample is carried through these two phases (or col-

umn) by means of a carrier gas which is inert with respect to the sample. The sample dissolves and revaporizes on the liquid phase of the solid support, and it is the difference in this time of dissolving and revaporization for the different components that makes the analysis possible. The analysis is recorded in terms of Gaussian peaks which result from competition between the vapor pressure and adsorption on the liquid phase between the carrier gas and the sample. From these peaks the nature of the component, the percent of that component, and the efficiency of the column can be figured.

The object of my experiment was to separate normal hexane, cyclohexane, benzene and aniline. This mixture was prepared with 25% of each component. The results by the experiment were fair. The benzene and cyclohexane came out under the same peak but they both had a % composition of about 24%. The aniline had such a long retention time (4 Min.) that the peak was a very poor shape and the % composition was about 13%. The normal hexane had a good retention time and a good peak shape but the results were about 42% composition. Possible solutions to these problems would have been to use different columns, different flow rates and/or different program rates, but time ran out so the experiment was not carried that far.

## 1967 FOUNDERS CUP AWARD

One highlight of the 1967 National Convention was the award of the Founders Cup to Tau Chapter. This cup was in possession of Xi Chapter during 1966-7. Tau Chapter earned the award in many ways:

- 1) It inducted a large group of new members at its initiation banquet.
- 2) It has increased membership and interest in Sigma Zeta partly by creating the office of news reporter. This officer not only gets news published in the student and local newspapers but acts as a public relations manager among interested students.
- 3) It has established a regular pledge ceremony and pledge period during which prospective members learn about the role of Sigma Zeta and wear Sigma Zeta pledge ribbons.
- 4) Three of its members, Veronica Krupinski, Janet Andraski, and Barbara Michaels, presented papers at this National Convention.
- 5) It is engaging in ecological studies of the effect of the changes produced upon the Sunfish Pond area by the Tocks Island Reservoir project, which will flood much of the area. Chemical studies, species counts, movies, and a tape narration of the ecology before and after the flooding are being carried out.
- 6) It celebrated its twentieth birthday by acting as host to the 38th National Convention, a role it carried out with marked success.

## BRIEF BIOGRAPHIES OF SIGMA ZETA HONOR AWARD RECIPIENTS

### Lambda Paul Berguson

A junior biology major, Paul has a good scholastic record and has served on several committees of Lambda chapter. He has been active in band, chorus, and summer opera, helped with the Student Handbook, and has acted as lab assistant and lab instructor in biology. He presented a paper on plant physiology to the National Convention.

### Rho Don Tiano

Don has been a leader in Rho Chapter activities. He has given a paper on gamma rays to the National Convention and to the Indiana Academy of Science. He has been chief student assistant for the science division at Indiana Central and acted as general manager for the science fair. He has been awarded a graduate assistantship in physics at DePauw University.

### Sigma Mary Anne Wight

A biology major, she has been president of the freshman class, member of the student council, 'Miss Fiesta' finalist, college representative to the Floresville Peanut Festival and the Pasadena Tournament of Roses. She has been active in Sigma Zeta and has served as chapter president. She was an NSF Undergraduate Research Participant and has presented her results to the National Convention. She has been accepted for medical school at the University of Oklahoma.

### Upsilon Darlene Sayers

Miss Sayers has a grade average of 3.2 and a biology major. She has worked hard for Upsilon Chapter. She presented a paper on histochemistry to the National Convention. She has been an honor scholar under the Argonne National Laboratories program. She has been accepted in the graduate and medical school of Indiana University and plans a career in biomedical research.

### Tau William Grady Moore

Dr. Moore obtained his B.A., M.A., and Ph. D. from the University of Texas, working with the late H. J. Muller, renowned geneticist. He came to East Stroudsburg State College in 1942 and was made department head in 1945. In 1947, he formed Tau Chapter and served as its sponsor until 1962. A dedicated teacher and administrator, he has influenced a generation of students at ESSC.

## CHAPTER ROLL

- BETA (1926)—McKendree College, Lebanon, Illinois  
Professor Fred Fleming
- GAMMA (1927)—Medical College of Virginia, Richmond, Virginia, 23219
- DELTA (1927)—Northeast Missouri State College, Kirksville, Missouri  
Mr. Eugene Smith
- EPSILON (1929)—Otterbein College, Westville, Ohio, 43481  
Dr. Roy H. Turley
- ZETA (1929)—Wisconsin State University, Stevens Point, Wisconsin,  
Dr. Gordon Geeseman 54481
- KAPPA (1935)—Western Illinois University, Macomb, Illinois
- LAMBDA (1936)—Mansfield State College, Mansfield, Pennsylvania, 16933  
Dr. Schappelle and Dr. Manly Powell
- MU (1937)—Mankato State College, Mankato, Minnesota, 56001  
Dr. Berten Weberg
- NU (1937)—Northern Illinois University, DeKalb, Illinois  
Dr. James W. Beach
- XI (1938)—Ball State University, Muncie, Indiana, 47304  
Dr. Robert Shelley
- PI (1943)—Millikin University, Decatur, Illinois, 62522  
Dr. James Drenan
- RHO (1943)—Indiana Central College, Indianapolis, Indiana, 46227  
Dr. Robert Brooker
- SIGMA (1944)—Our Lady of the Lake College, San Antonio, Texas, 78207  
Sister Elizabeth Anne
- TAU (1947)—East Stroudsburg State College, East Stroudsburg, Penn.  
Mr. William Eden
- UPSILON (1948)—Anderson College, Anderson, Indiana, 46012  
Dr. Kenneth E. Cook
- PHI (1948)—Eureka College, Eureka, Illinois, 61530  
Prof. Ronald B. Greek
- CHI (1951)—Missouri Valley College, Marshall, Missouri, 65340  
Don S. Balka



PSI (1956)—Central Missouri State College, Warrensburg, Missouri, 64093  
Mr. Harold Hollis

OMEGA (1961)—State Teachers College, Frostburg, Maryland, 21533  
Dr. Walter Rissler

ALPHA ALPHA (1961)—State University College of Education, Oswego,  
New York Robert B. Sykes, Jr.

ALPHA BETA (1963)—Campbellsville College, Campbellsville, Kentucky,  
Miss Beatrice Evans 42718

## CHAPTER NEWS

**BETA (McKendree College)**

President—Judy Ann Behrens; Vice-President—Tyrone Holliday; Secretary-Treasurer—David Habernehl; Advisor—Prof. Fred Fleming. Each month Beta holds one business meeting and one meeting with an outside speaker.

**EPSILON (Otterbein College)**

President—Karl Kempf; Vice President—George Andrews; Secretary—Lois Zimmerman; Treasurer—Tom Crane; Advisor—Dr. Roy Turley. Regular meetings with student or faculty speakers.

**ZETA (Wisconsin State University, Stevens Point)**

President—Daniel J. Caesar; Vice President—Leslie Niehof; Treasurer—Dr. G. E. Geeseman;; Advisor—Dr. Geeseman. Fifty new members were initiated in December. A visit to the planetarium and a discussion 'Is Science Immoral?' enlivened two meetings.

**LAMBDA (Mansfield State College)**

President—Paul Berguson; Vice President—Dawn Burke; Treasurer—Margret Kandeline; Historian—Marie Manchester; Recording Secretary—Connie Wajcik; Corr. Secretary—Joanne Mayer; Advisors—Dr. Newell Schappelle, Dr. Manly Powell. Speakers include faculty and student members. Members also give tutoring to those in need.

**MU (Mankato State College)**

President—Carol Sippert; Vice President—Joe Christensen; Secretary Treasurer—Karen Benson; Advisor—Dr. Burton Weberg. John Anderson, Karen Benson, Bruce Bush, Joe Christensen, James Einck, Jerry Fleming, Karen Hanson, Eileen Karl, Kenneth Olson, Daniel Olsen, Karen Pudil and Carol Sippert were initiated during the year.

**PI (Millikin University)**

President—Mary Bartholemew; Vice President—Harold Miller; Corresponding Secretary—Bev Emrich; Recording Secretary—Tom Wyne; Advisor—Jim Drenan. Monthly meetings with speakers from faculty or area. Andy Barber, Brenda Foster, Jim Grissom, Jim Heynen, Chuck Nordstrom and Fred Spottsville were initiated as active members.

**SIGMA (Our Lady of the Lake College)**

President—Judy Varga; Vice President—Lillian Abrego; Secretary—Diana Mendoza; Treasurer—Jan Adamity; Historian—Pat McMahon; Advisor—Sister Elizabeth Anne. In addition to regular meetings, Sigma holds a welcome for incoming freshmen, a money-making dance, a pledge week, an Audubon film tour, reports on student research, a field trip, and a supper to honor graduating seniors.

**UPSILON (Anderson College)**

President—William I. Webster; Vice President—John Kemler; Secretary—Sharon Ann Davis; Advisors—Dr. Kenneth Cook, Prof. Charles Miller. New members initiated include associates Clella Ann Gilbert, Charlotte Kingsbury, Carol Middleton, Mary Reardon, Roger Wells, and Daryl Yoder; new active members are Wilma Bales, Sharon Davis, Suzanne Flowers, Francine Foronda, Duane Leatherman, Patricia Richardson, Max Shellenbarger, David Sherry, James Shoot, Thomas Trick, Siu-Man Tasng, William Webb, William Webster, Gary Wood and Faculty-member Harken Hames.

**PSI (Central Missouri State College)**

President—Randolph Rush; Vice President—Reginald Coates; Secretary—Beverly Rings; Treasurer—Charles Liley; Advisor—Gary E. Clark. Psi has been holding a membership drive and a sale of handbooks to raise money for convention delegates.

**CHI (Missouri Valley College)**

President—Don S. Balka; Vice President—Charles Polleschultz; Secretary-Treasurer—Joyce Oyler; Advisor—Prof. David Dautenhahn. The re-activated Chi group is cosponsoring with the Math Club a series of lectures on computer sciences and a visit to a computer center.

**OMEGA (Frostburg State Teachers College)**

Advisor—Dr. Walter Rissler. Student members acted as tutors in math, biology, physics, and chemistry. Field trips, movies, and speakers from on and off campus are enjoyed at regular meetings. A dinner and a picnic round out the year.

**ALPHA BETA (Campbellsville College)**

President—Dennis Shaw; Vice President—Hilda Haynes; Treasurer—Sandra Smith Goff; Advisor—Miss Beatrice Evans. Monthly meetings are held, along with two initiations, judging the Central Kentucky Science Fair, and an annual picnic to which alumni are invited.

