

**THE
SIGMA
ZETAN**



Volume XLIII

1974-1975

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OUR NATIONAL PRESIDENT

It is an honor for me to serve in the high office of President of Sigma Zeta.

In previous years the need for communications has been stressed repeatedly. With the regional concept, it was hoped that greater participation would result. New programs require time for implementation and results. Greater efforts must be expended to build the regions into viable relationships or the effort will be for naught.

Most colleges today are experimenting with curricula so that most undergraduate members have the opportunity to do independent study or honors work. From such studies come papers as requirements for course completion. Why not send the title and an abstract to next year's host chapter (Psi in Warrensburg, Missouri). You will enjoy and learn from such experiences.

The year 1975 represents the 50th year since our founding in 1925 at Shurtleff College. Sigma Zeta is the ideal Honor Society for small colleges as well as for larger schools. Why not strive to reactivate some of the inactive chapters and start new ones to reach a goal of 50 active chapters in the 50th year of operation? I will try to start a new chapter. What will you do?

I look forward to working with each chapter and hearing from you as to your accomplishments this year. How about getting in touch with your alumni as a starter? They have an interest in your chapter and could be of help to you.

Sincerely,

Clarence C. Chesnutt

PROCEEDINGS OF THE NATIONAL COUNCIL OF SIGMA ZETA

April 5, 1974

The National Council of Sigma Zeta was called to order by National President Roger C. Splinter at 6:05 p.m., in Ashby Hall, Baptist College at Charleston, Charleston, South Carolina.

The minutes of the 44th annual convention were approved. The interim financial report for the period 1 July 1973 to 31 March 1974 was also approved. A copy of the annual financial report is appended as an official portion of these minutes.

The three regional representatives reported on activities during the year. Tim Morgan, Western Region, reported that they had mailed a fall letter and a mid-year letter to each of their chapters. Homer Paschall, Central Region, reported that they had sent a letter with a return card requesting reports on chapter activities. Prof. Paschall also stated that he had called most of the chapters prior to the convention. Roxanne Thompson, Eastern Region, reported that several mailings had been made.

General discussion followed on ways to make the regions more effective. It was suggested that National and Regional meetings might alternate. No consensus was obtained.

The proposal by Prof. Dautenhahn to raise convention travel allowances was discussed and approved, effective immediately. The proposal states:

Each chapter in attendance (this is understood to mean at all sessions of the convention) will be paid seven cents per mile if only one person is in attendance, nine cents per mile with two to six people in attendance, and twelve cents per mile with over six in attendance. This is for the round trip distance from the chapter location to the convention city, the distance to be determined on a straight-line basis. In no case shall the total reimbursement (including other sources) exceed the total expenditure. Chapters are encouraged to seek other support.

Ways to raise money needed for this added expense were discussed. A motion passed to raise dues \$1, effective September 1, 1974.

The 1975 convention was set for Psi Chapter, Central Missouri State University, Warrensburg, Missouri. The 1976 convention is scheduled for Lambda Chapter, Mansfield, Pennsylvania, and the 1977 convention is planned at Anne Arundel Associate Chapter, Arnold, Maryland.

A motion was passed to put the Nu Chapter funds (\$187.72) into the development fund.

Four honor award nominees were approved. The names are listed in the convention minutes.

Convention committees were named. The names of the student and faculty delegates appointed are listed in the convention minutes.

A delegation from Anne Arundel presented a petition to the Council, asking that chapters at two-year colleges be accorded regular chapter status with a Greek letter designation. The petition was taken under advisement.

The meeting adjourned at 7:02 p.m. to attend the annual banquet. After the dinner, Dr. George Fassuliotus from the Agricultural Research Station presented an illustrated lecture on "Plant Nematodes".

Present at the National Council meeting:

Frank Cheatham (Alpha Beta)

Clarence Chesnutt (Alpha Omicron - National Vice-President)

Kenneth Cook (Upsilon - National Recorder-Treasurer)

George Culbertson (Alpha Xi)

David Dautenhahn (Chi - National Historian)

Duane Deal (Xi)

Charles Denny (Alpha Xi)

Ed Leslie (Chi)

Tim Morgan (Chi - Western Region student representative)

Homer Paschall (Xi - Past National President)

Marvin Stephens (Alpha Gamma)

Roger Splinter (Psi - National President)

Roxanne Thompson (Anne Arundel Associate - Eastern Region student representative)

George Welker (Xi)

Eric Zurcher (Alpha Gamma - Central Region student representative)

MINUTES OF THE FORTY-FIFTH ANNUAL CONVENTION

OF SIGMA ZETA—5, 6 APRIL 1974

The convention committees met from 8:00 to 8:30 a.m.

The forty-fifth annual convention of Sigma Zeta, Honorary Science Society, was called to order by National President Roger C. Splinter at 8:30 a.m. Alpha Omicron president Bill Heatley introduced Dr. John A. Barry, Academic Vice President of Baptist College at Charleston. Dr. Barry gave Sigma Zeta delegates a warm welcome.

President Splinter opened the business meeting by introducing the national officers present. He urged the chapters to send in materials for the Sigma Zetan, as the editor was unable to attend the meeting. The minutes of the forty-fourth convention and the interim financial report were approved.

The regional concept was discussed briefly, with the emphasis again placed upon the idea that the chapters ought to communicate more.

The proposal to raise convention travel allowances was introduced. Professor Dautenhahn presented figures showing that the average increase for the previous two years would have been \$289; the increase for this convention would be \$574. The motion passed, retroactive to this convention.

A motion passed to raise the dues to \$6, not including a pin, to become effective September 1, 1974.

The auditing Committee was Frank Cheatham (Alpha Beta), Ed Leslie (Chi), Clark Hoops (Alpha Gamma), Linda Darrell (Psi), and Sandra Phillips (Alpha Theta). Professor Leslie presented their report that they found the books to be in order. He moved that the financial report be accepted and that the recorder-treasurer be commended. The motion passed.

The Resolutions Committee was George Culbertson (Alpha Xi), George Welker (Xi), Hal Gray (Beta), Alice Johnson (Chi), and T. J. Richardson (Alpha Beta). Hal Gray presented the following report, which was approved:

Be it resolved that the National Convention of Sigma Zeta express its appreciation to Clarence Chesnutt and the host chapter for making the 45th National Convention a profitable and enjoyable one.

Be it further resolved that the convention express its thanks to the National Officers whose continued support and hard work make for a smooth functioning of the National Organization. The gratitude of the Convention is extended to Dr. James Drenan, Pi Chapter, and Dr. Homer Paschall, Xi Chapter, who are retiring from the National Council. Dr. Drenan has devoted 14 years of labor to the National Council. He was National Vice President 1960-61, National President 1961-63, National Past President 1963-64, and has been the National Editor since 1964. Dr. Paschall has given six years of service to the National Council. He became National Vice President in 1968, in 1969 he was elected National President and served in that capacity for two years. Since 1971 he has been the National Past President. These two men have devoted a total of 20 years to the National Council.

Be it finally resolved that a special note of commendation be made to the students from Anne Arundel Associate Chapter for their persistence in remaining at the National Convention even after arriving two days early.

Honor Awards were presented to:

Jack Bennick (Alpha Theta)

Bill Davis (Chi)

Jim Jenkins (Psi)

Judy Charlene Shortt (Alpha Xi)

The National Council announced an Honor Award to Professor Jim Drenan, National Editor, 1964-1974.

After a coffee break, the student papers were presented. Bill Heatley introduced the following papers:

Deborah DeVilbiss (Alpha Xi) - Microorganisms in Southwest Virginia Strip Mines

Mary Jones and Jenny Bishop (Anne Arundel Associate) - Similarities of Individuals of Sociopathic Personality

Lucinda Byers (Lambda) - Sickle Cell Anemia

Gregory Caplinger (Upsilon) - STH Maintenance in Hypohysectomized Rana Pipens with a Synergistic Affect

Dieter Bartschat (Alpha Omicron) - A Radioisotope Exchange in Prussian Blue

Ron Copp (Lambda) - Cantilever Beam Deflection

Roger Stayer (Lambda) - Acupuncture

George Kessler (Chi) - Application of the Method of Least Squares

Thomas Lee and R. E. Siverly (Xi) - A Preliminary Study of Autogeny in Stenogamous and Non-stenogamous Strains of Culex pipiens pipiens (Paper read by title since both authors were absent)

Patrick Walter (Chi) - Error Analysis of Numerical Integration Procedures

David Bailey (Psi) - Morphological Adaptations for Ant Mimicry in Salticid Spiders

Eric Zurcher (Alpha Gamma) - The Pollen Stratigraphy of Brewster Bog

Martha Vaughan (Alpha Gamma) - Biochemical and Biological Analysis of Pitcher Plant, Sarcenea Purpurea Water

John Stratton (Psi) - Design, Construction, and Calibration Parameters for an Astronomical Spectrograph

The business meeting was called to order at 12:45 p.m. A brief recess was called for the election of regional representatives. President Splinter announced the following convention sites: Psi, 1975; Anne Arundel, 1976; and Lambda, 1977.

The regional representatives were announced:

Western - Joe Snobel (Psi) and Sherry Erickson (Chi)

Central - Homer Paschall (Xi) and Alan Atcher (Alpha Beta)

Eastern - Roxanne Thompson (Anne Arundel) and Van Daniel (Alpha Xi)

The Founders Cup Committee was composed of Pat Walter (Chi), Judy Harding (Alpha Xi), Roxanne Thompson (Anne Arundel), Kenneth Cook (Upsilon), and Roger Splinter (Psi). Roxanne Thompson announced that Psi Chapter was the winner, and she presented the cup to the chapter.

The Nominating Committee was Tim Morgan (Psi), Marty Vaughn (Alpha Gamma), Charles Tye (Alpha Omicron), Duane Deal (Xi), and Fred Fleming (Beta). Their report was presented Charles Tye. The nominees were:

Past President: Roger C. Splinter (Psi)

President: Clarence C. Chesnutt (Alpha Omicron)

Vice President: Marvin W. Stephens (Alpha Gamma)

Recorder-Treasurer: Kenneth E. Cook (Upsilon)

Historian: David I. Dautenhahn (Chi)

Editor: Duane E. Deal (Xi)

It was moved and seconded to elect the slate and the motion carried.

Professor Deal asked for Sigma Zetan materials. Professor Welker asked that we observe the rules for presenting papers, especially when an author is absent. Professor Splinter thanked Baptist College at Charleston and Alpha Omicron Chapter for their hospitality and then passed the gavel to Professor Chesnutt. President Chesnutt urged the delegates to get involved in their chapter and to communicate with each other.

The meeting adjourned at 1:30 p.m.

Respectfully submitted,

Kenneth E. Cook
National Recorder-Treasurer

REGISTRANTS

Beta

Wayne Dillender
Fred A. Fleming
Gray Hall
Colleen Karrick
Larry Kunz
Kathy Markarian
Bruce Winterroud

Lambda

Betty Casselberry
Ronald Copp
Kathleen Hallam
Roger Stager

Xi

Donna Amicts
Marilee Behrman
Paul Challgreen
Duane E. Deal
Jerry Levin
Homer D. Paschall
Vicki Renforth
George W. Welker

Upsilon

Greg Caplinger
Kenneth Cook
Marie Mayo

Chi

David Dautenhahn
Sherry Erickson
Alice Johnson
George Kessler
Ed Leslie
Cheryl Maddox
Patrick Waltu

Psi

David Bailey
Betty Yen San Chi
Terry Boeth
Linda Danow
Sharon Haselhorst
Ralph McNair
Debbie Means

Tim Morgan
Alex Pettigrew
Bonnie Rau
Joseph Snoble
Roger C. Splinter
Randy Wilson

Alpha Beta

Alan Atcher
Frank Cheatham
Jim Richerson
Sonny Vickery

Alpha Gamma

Ben Battles
Clark Hoopes
Becky Masten
Ignatices Meimious
John Siongdoles
Marvin W. Stephens
Craig Stair
Marty Vaughan
Eric Zurcher

Alpha Theta

Sandra K. Phillips
Sharon Runyon
Edwin Walker

Alpha Xi

James Cox
George Culbertson
Van Daniel
Charles Denny
Debbie DeVilbiss
Chris Evans
Judy Harding
Royce Mullins
Charlene Short

Alpha Omicron

Kenneth Bonnette
Dieter Bartschat
Clarence Chesnutt
Donald Copley
Becky Faust
David Fox
Fanorious Frederigos

R. W. Heatley
Beth Linder
Stephen A. Nemeth, Jr.
Joanne B. Solesbee
Charles R. Tye
Fred Worthy

AAAC

Jennie L. Bishop
Wayne Ehler
Mary M. Jones
Gail Kinkade
Linda Peregoy
Mary C. Rodrigues
Roxanna Thompson

Dinner Guests

Dan Bailey
Natalie Chesnutt
Dr. George Fassuliotus
Betty I. Nemeth
Barry Watkins

SIGMA ZETA HONORARY SCIENCE SOCIETY

Financial Report—July 1, 1973-June 30, 1974

Balance on hand, July 1, 1973	\$3237.25
Receipts	\$5950.02
Total cash	\$9187.27
Disbursements	\$5054.02
Balance on hand, June 30, 1974	\$4133.25
Balance in checking account	\$2133.25
Balance in savings account	\$2000.00
Balance on hand, June 30, 1974	\$4133.25

Development Fund

Balance on hand, July 1, 1973	\$2025.98
Interest, September 30, 1973	55.69
Interest, December 28, 1973	56.14
Gift, November 20, 1973	5.00
Interest, March 29, 1974	56.95
Interest, June 28, 1974	57.74
Balance on hand, June 30, 1974	\$2257.50

ABSTRACTS OF STUDENT PAPERS

APPLICATION OF THE METHOD OF LEAST SQUARES

George W. Kessler, II, Chi Chapter

This particular application of the method of least squares involves a random and thus somewhat simple selection of points for use in land areas and land volumes. Illustrations are used to represent an actual land volume taken from the Little Chariton River levee at Glasgow, Missouri, with the cooperation of the U. S. Army Corp of Engineers.

The conventional and the least squares methods of obtaining the survey field data are illustrated. A brief illustration of the half-average end area method of obtaining land volumes is discussed.

The author looks at a particular section of drained river channel and compares the methods of volume computation. The volume computed by conventional cross section was 901 cubic yards; the volume computed by the method of least squares was 928 cubic yards. The contractor of this job applied 952 cubic yards.

The method of least squares opens the door to possibly more accurate volume measurements, hence a savings in money. Also, considerable time is saved by the survey party in the initial layout of the section.

A PRELIMINARY STUDY OF AUTOGENY IN

STENOGAMOUS AND NON-STENOGAMOUS STRAINS OF CULEX PIPIENS PIPIENS

Thomas M. Lee and R. E. Siverly, Xi Chapter

Two strains of *Culex pipiens pipiens* were reared in the laboratory to compare the frequency of the expression of autogeny in each strain. A stenogamous strain was established from egg rafts taken from storm sewer catch basins located in Muncie. A previously established non-stenogamous strain originated from egg rafts collected from an open, unshaded industrial waste lagoon.

Larvae were obtained from egg rafts produced by the laboratory colonies and were reared under standardized conditions. Adults emerged in 1' x 1' x 1' screened cages and then were transferred to pint-sized cardboard cartons and maintained on a 10% honey solution.

A total of 748 females, all of which were at least five days old, were dissected, their ovaries removed, and categorized according to Christophers' classification.

Both strains exhibited a low frequency of autogeny. Further study is indicated to establish physiological and/or environmental factors which influence autogeny in this species.

**ERROR ANALYSIS OF CERTAIN QUADRATURE FORMULAS
USED IN NUMERICAL ANALYSIS**

Patrick A. Walter, Chi Chapter

Given a set of points (x_0, y_0) , (x_1, y_1) , . . . , (x_n, y_n) such that values of x are spaced at equal intervals, that is $x_1 - x_0 = x_2 - x_1 = \dots = x_n - x_{n-1} = h$ and an integral in the general form $\int_a^b f(x) dx$ where $h = b - a/n$ then Newton's Binomial Interpolation formula represents the form of the basic quadrature formula over n equal intervals by putting $n=1, 2, 3, \dots$, etc. of width from which we may obtain specific formulas over any given number of points.

This paper will analyze three quadrature formulas, Trapezoidal, Simpson's, and Weddle's Rules (where $n=1, 2, 6$ respectively) and their theoretical (inherent) error associated with each. These three quadrature formulas are members of a large family of formulas derived from Newton's formula. Three different definite integral problems were evaluated in order to compare the exact results of the integral to that of the numerical result from each of the three quadrature formulas. The theoretical error from each formula was compared with the actual error, the difference being called the error difference or round-off error.

**DESIGN, CONSTRUCTION, AND CALIBRATION
PARAMETERS FOR AN ASTRONOMICAL SPECTROGRAPH**

Jon Stratton, Psi Chapter

An opportunity to briefly investigate one of the universe's secrets inspired construction of an astronomical spectrograph. Comet 1973f, Kohoutek, was the holder of these secrets. Kohoutek's unpredictable disappointment left a net gain of one spectrograph and a set of parameters for design and construction.

A spectrograph is part of a total system. The telescope and support assemblies must be of sufficient quality to yield satisfactory results required of a spectrograph. Rigid, vibration independent bases and balanced, unstressed telescopes with accurate adjustment controls are needed. Spectrograph format parameters include background light isolation and grouped multiple exposures. Parameters of a Fraunhofer principle spectrograph are as follows: 1) The slit width must be narrow enough to simulate a point source yet sufficiently wide to pass enough light energy to react with the recording media in a reasonable time frame. 2) Focal length of culminating assembly must be quite exact to insure diverging rays from the source slit are made parallel. 3) Diffraction grating density depends on required separation for a given change in wavelength. 4) Grating to recording media distance will determine total spectral width and must be large enough to minimize distortion. 5) An iron arc light source yields a stable and rich spectral calibration pattern.

First order approximations can be made by using standard assemblies and sub-assemblies to establish a starting place. Refinements and modifications can then be incorporated to satisfy all parameters for an initial prototype.

RADIOISOTOPE EXCHANGE IN PRUSSIAN BLUE

Dieter Karl Bartschat, Alpha Omicron Chapter

Under the supervision of

Dr. Augustus Kennerly Bonnette, Baptist College at Charleston

The purpose of this research was to determine the possibility of exchange of ions from the face centered cubic structure of the $\text{NaFeFe}(\text{CN})_6$ (Prussian Blue) crystal, and if there is exchange, what are these ions and their possible use in practical applications.

The Prussian Blue was prepared in the soluble and insoluble form. Radioactive (hot) and non-radioactive (cold) precipitates were prepared, using ^{59}Fe and ^{22}Na where needed. Exchange was determined by allowing the prepared precipitates to remain in contact with a supernate solution of the ionic species which we wished to study. If the precipitate was hot, then the supernate was cold, and the count rate of a certain aliquot of the supernate would increase if exchange occurred. If the precipitate was cold, then the supernate was hot and the count rate of the aliquot of the supernate would decrease.

It was found that only the Na of the soluble form and the $\text{Fe}+3$ in solution would exchange nearly completely with the Na in the crystal after about 5 hours (all exchanges were run for at least 20 hours) and that the rate of Na leaving the crystal was about equal to the rate of the $\text{Fe}+3$ entering the crystal. $\text{Fe}+3$ was also found to exchange with the interstitial $\text{Fe}+3$ of the insoluble Prussian Blue, reaching a maximum after about 5 hours when an equilibrium was evidently established between the species in solution and the species in the crystal.

It has been shown in previous work that the Na in the crystal and the $\text{Fe}+3$ that replaces it are interstitial in nature, which would account for the ease of exchange.

This research supports the use of the Prussian Blue crystal as an exchange medium, particularly for heavy metal ions.

CHAPTER REPORTS

Beta [1926] - McKendree College, Lebanon, Illinois 62254

Professor Fred Fleming, Advisor

	1973-74	1974-75
President	Laura Easely	Diana Widicus
Vice-President	Dennis Hoerner	Kathy Markarian
Secretary	Carol Bopp	Debbie Lanus
Treasurer	Diana Douglas	Colleen Karrick
Historian	Debbie Lanus	Terry Planitz

Our activities included sponsoring various speakers in the field of science and attending the national convention. Eleven new members were inducted into the chapter.

GAMMA [1927] - Virginia Commonwealth University, Richmond, Virginia 23219

Dr. Alvin Zfass, Advisor

	1973-74	1974-75
President	Michael Edwin Nuckols	John B. Rose III
Vice-President	Kenneth Joseph Pollack	Wayne L. Spellman
Secretary	Brenda Pace	Brenda C. Minor
Treasurer	Janice M. Foster	Margot D. Craven

Seventy-seven new members were elected into the chapter.

DELTA [1927] - Northeast Missouri State University, Kirksville, Missouri 63501

Professor Eugene Smith, Advisor

	1973-74	1974-75
President	Mark Koerner	Mary Herring
Vice-President	Rick English	Nich Shoults
Secretary	Janet Windoffer	Pamela Christy
Treasurer	Ronnie Shocks	Carole Rowland

Five new members were elected into Delta Chapter.

EPSILON [1919] - Otterbein College, Westerville, Ohio 43081

Dr. P. Rexford Ogle, Advisor

	1973-74	1974-75
President	Robert W. Timson	Robert H. Hutson
Vice-President	Robert H. Hutson	Peter B. Baker
Secretary	Sharon Lynn Kauffman	Kim Ogle
Treasurer	John F. Vickers	Al Goff

Epsilon Chapter had a monthly meeting in October and another in April at which they elected officers. They sponsored a speaker, Dr. Fred Urbach from Case Western, who spoke on the metabolic utilization of oxygen.

ZETA [1929] - Wisconsin State University, Stevens Point, Wisconsin 54481

Professor Harry Smith, Advisor

No report was received from this chapter.

KAPPA [1936] - Western Illinois University, Macomb, Illinois 61455

Professor Gerald White, Advisor

	1973-74
President	Alice Scott
Vice-President	Walter Dawkins
Secretary	Dennis Lubbs
Treasurer	Robert Johnson

Ninety-one new members were initiated into this chapter.

LAMBDA [1938] - Mansfield State College, Mansfield, Pennsylvania 16933

Drs. George H. Millen and John A Hartman, Advisors

	1973-74	1974-75
President	Roger M. Stager	Philip Swartz
Vice-President	Philip Swartz	Renwick Lundy
Secretary, Rec.	John Swanson	Kathleen Hallam
Secretary, Cor.	Thomas S. Taylor	Lucinda Byers
Treasurer	Charles Shades	John Woelfel

During the 1973-74 school year, the Lambda Chapter focused its attention on the energy crisis. The biggest project was the placing of over 5000 energy conservation stickers throughout the campus. These stickers were placed above the light switch in almost every room in every building on campus.

Our recycling project was accelerated with new centers set up throughout the campus. Large posters were printed up and displayed to emphasize the need for recycling and to indicate recycling centers. An attractive bulletin board was maintained with its themes being energy conservation and recycling.

As in previous years, Sigma Zeta sponsored films of all sorts, in conjunction with the physics club. A hoagie sale was held on October 18, 1973, during the first semester pledge period to help the new pledges and members get acquainted. Our annual banquet was held March 1, and was attended by over 40 people.

MU [1937] - Mankato State College, Mankato, Minnesota 56001

This chapter is apparently still temporarily inactive.

XI [1938] - Ball State University, Muncie, Indiana 47306

Drs. Homer Paschall and Duane Deal, Advisors

	1973-74	1974-75
President	Vickie Lynn Renforth	Kay Sorg
Vice-President	Gerald Levin	Barb Cler
Secretary	Donna Amick	
Treasurer	Sally Cain	Karen Sacks

Xi Chapter began the year with a picnic. Members as well as prospective members attended. This was designed to get acquainted.

Forty-eight new members were initiated at the November initiation. Afterwards there was an informal meeting attended by various science and math professors.

The December meeting was devoted to touring research labs in the Cooper Science Complex. A physics, biochemistry, and molecular biology lab were visited.

In February the members visited the observatory and planetarium. A field trip to the Museum of Science and Industry in Chicago also took place in February.

At the March meeting Greg Spangler, Ross Koile, Tom Lee, and Barry Lichty gave summaries of their undergraduate research projects. The members also assisted with the East Central Indiana Science Fair at Ball State.

Two members were given research grants from the money donated by alumni of the chapter. Bruce Meyers received a grant to construct a solar generator. Ross Koile received a grant to continue research concerning a chemical study of motor oil.

PI [1943] - Millikin University, Decatur, Illinois 62522

Dr. Neil Baird, Advisor

	1973-74	1974-75
President	Steven Korbet	Nancy Owen
Vice-President	Steven Vanstrom	Sicy Lee
Secretary	Jo Priest	Teri Johnson
Treasurer	Warren Jeseke	Jim Harres

The first meeting of the 1973-74 school year was a picnic at Spittler Woods. Walt Reppenhagen reported on his summer in South America where his father is trying to establish a new hospital. John Wichert told of his summer with an obstetric-gynecological doctor.

At the second meeting, the chapter decided to buy science reference books for the library in memory of Karen Gerhdt, a Sigma Zeta member who was killed in an automobile accident in November, 1972. A one semester probationary period was started for all those invited to join Sigma Zeta. Robert Sindelar presented a program on Medical Pharmacology.

Programs at successive meetings included: "Field Studies in Marine Ecology" presented by Mr. James Smithson, biology instructor at Millikin; "Nitrate and Phosphate Levels in Lake Decatur and the Sangamon River" presented by Paige Hall, a Millikin student; and a discussion of the success of the paper and glass recycling project started by the Millikin Environmental Affairs Council.

The final meeting was a picnic at Faires Park when the officers for next year were elected.

RHO [1943] - Indiana Central College, Indianapolis, Indiana 46227

Dr. Victor Chiu, Advisor

	1973-74	1974-75
President	Greg Dietz	Dave Sanderson
Vice-President	Bryan Chamberlain	Doug Woessner
Secretary-Treasurer	Rita Huffman	Jolene Hochstetler

The Rho Chapter held monthly meetings at which they had speakers from the Indianapolis area tell of their work. Among the speakers were Mr. Eugene Crum who discussed "Clinical Trial and Regulations of New Drugs", Mr. George Man who talked about pollution control, and Mr. Steve Cart from Naval Avionics who discussed "Modern Electronics Technology."

The year closed with a picnic for both Sigma Zeta and Science Club members.

SIGMA [1944] - Our Lady of the Lake College, San Antonio, Texas 78207

Dr. Patricia Brown and Sr. Isabel Ball, Advisors

	1973-74	1974-75
President		Deborah Ahrendt
Vice-President		Joseph B. Cook
Secretary-Treasurer		James Downs

No report was received from this chapter.

TAU [1944] - East Stroudsburg State College, East Stroudsburg, Pennsylvania 18301

Professor C. David Kern, Advisor

	1973-74	1974-75
President	Frank Romano	Claire Blair
Vice-President	Robert Curtolo	Michael Sworin
Secretary-Treasurer	Deborah Clappison	Ronald Eva

Twenty-two new members joined Tau Chapter this past year.

UPSILON [1948] - Anderson College, Anderson, Indiana 46011

Dr. Charles Miller, Advisor

	1973-74	1974-75
President	Karen Phillips	Karen Phillips
Vice-President	Mark McDaniel	Larry Rosenberg
Secretary	Debra Robinson	Vicki Thompson
Treasurer	Kathy Caylor	Malcolm Manners

The chapter took a trip to the Museum of Science and Industry and the Adler Planetarium in Chicago in March, 1974. Two faculty and one student (with a paper) attended the national convention. A picnic was held in April at which 13 students and 1 faculty member were initiated into the chapter.

PHI [1948] - Eureka College, Eureka, Illinois 61530

Professor Donald Brunkhart, Advisor	1973-74	1974-75
President	Fred Schultz	Nancy K. Renfer
Vice-President	Gary Staker	Gary Staker
Secretary	Nancy Renfer	Faye (Chris) Simpson
Treasurer	Kathy Cline	Kathy Cline

Seven new members were initiated into the chapter.

CHI [1951] - Missouri Valley College, Marshall, Missouri 65340

Professors David Dautenhahn and C. E. Leslie, Advisors

	1973-74	1974-75
President	Gail O'Neal	Alice Johnson
Vice-President	Pat Walter	Sherry Erickson
Secretary-Treasurer	Alice Johnson	Cathy Dautenhahn Davis

During the year, the chapter saw two films from the NASA Space Center and had a special science seminar on Skylab missions which featured Dr. Ernest G. Hildner from the High Altitude Observatory in Boulder. Dr. Gavin Doughty of Tarkio College gave a presentation of the educational and administrative applications of computing and data processing.

Chi Chapter entered a float in the homecoming parade and participated in the "hanging of the greens" project at Christmas. Members sold popcorn and soft drinks at basketball games. Dr. Roger Splinter was the speaker at the spring banquet.

Seven members attended the national convention, where two papers were given. Sherry Erickson was elected to serve as the Student Coordinator of the Western Regions. William M. Davis II was awarded the Sigma Zeta Honor Award.

PSI [1956] - Central Missouri State University, Warrensburg, Missouri 64093

Drs. Roger Splinter and Joseph Snoble, Advisors

	1973-74	1974-75
President	Doug Kenney	Alex Pettigrew
Vice-President	Belinda Dickinson	Tim Morgan
Secretary	Mary Kay Serrone	Terry Boeth
Treasurer	Alex Pettigrew	Robert Shermer
Historian	Jim Jenkins	Jim Kleoppel

Psi Chapter activities this year were many and varied. The chapter held a picnic in the fall as an informal meeting. Money-making projects included a car wash, a paper drive and a bake sale. The chapter had a Christmas party in December and also decorated the Science Building for the Christmas season. They entered a unit in the homecoming parade. Members were involved in visiting local school science classes. A number of chapter members and members of the science faculty were speakers at the regular meetings. A large delegation attended the national convention where two members presented papers.

For their fine work, Psi Chapter won the Founder's Cup Award.

OMEGA [1961] - Frostburg State College, Frostburg, Maryland 21532

Dr. Paul Hunt, Advisor

	1973-74	1974-75
President	Stephen Kenny	Kathleen Rosmarin
Secretary-Treasurer	Doris McGettigan	Jennifer McCray

After a year of inactivity, the chapter began an education program about Sigma Zeta and a membership drive. Plans were made to continue this program in the fall. Chapter activities included assistance at the FSC Mathematics Symposium and joint participation with other science and mathematics groups in organization of a student scientific publication.

ALPHA BETA [1963] - Campbellsville College, Campbellsville, Kentucky 42718

Professors Beatrice Evans and Franklin Cheatham, Advisors

	1973-74	1974-75
President	Tadaro Richardson	John Helwig
Vice-President	John Helwig	Dave Brandon
Secretary-Treasurer	Patricia Miller	Donna Pepper

Seven new members were initiated into the chapter. Four students and one faculty member attended the national convention. Alan Atcher was selected as one of the regional student coordinators at the national convention. The chapter assisted Campbellsville College in sponsoring a regional science and mathematics contest. Several graduates and guests, in addition to the chapter's active members, attended the annual picnic.

ALPHA GAMMA [1969] - Malone College, Canton, Ohio 44709

Professors Glenn Lipely and Marvin Stephens, Advisors

	1973-74	1974-75
President	Eric Zurcher	Sizanne Glass
Vice-President	Merv Yoder	Kathy Niver
Secretary	Bev Battles	Karen Leach
Treasurer	Jack White	Nancy Markeson

The Alpha Gamma Chapter has been regularly meeting twice a month. A bulletin board has been used to publicize activities and a newsletter has been started to achieve better communication. Some of the activities have been a panel discussion of graduate schools given by some of its faculty members, a progressive dinner at the homes of the faculty including initiation of new members, a tutoring service in science and math, science fair judgments by several of the members, and fund-raising projects of selling Sigma Zeta T-shirts, "ecology" candles, and tickets to the Sportsmen's Show, and participating in Gold Rush, a 20-mile walk for charities.

Eight delegates and Dr. Stephens attended the national convention, where two members presented papers and two members served on committees. The year ended with a Sigma Zeta Day consisting of a canoe trip, pizza party, and induction of new officers and nine new members.

ALPHA DELTA [1969] - Kansas Newman College, Wichita, Kansas 62713

Sister Remigia Kerschen, Advisor

	1973-74	1974-75
President	Jean Clithero	Steve Williamson
Vice-President	Rodney Hausmeyer	Gene Cannata
Secretary-Treasurer	Linda Burnside	Mary Beth Borst

Nine new members were inducted in September. The officers and members were cited for outstanding service by the school alumni paper. The chapter received the Outstanding Campus Organization Award for the second year.

The chapter sponsored three blood drives. They sold replicas of the school mascot at basketball games and painted the Kansas Newman symbol on the walls of the Campus Activity Center.

Several members assumed responsibility for giving planetarium demonstrations to high school students. Larry Hund, Jean Clithero, and Mark Troilo were engaged in special research projects and gave reports of these at meetings. Members again purchased a living Christmas tree and decorated it with "recycled trash" to carry out an ecological theme. A science bowl was conducted in March.

ALPHA EPSILON [1969] - Marion College, Marion, Indiana 46952

Drs. Robert Werking and Raymon Elliott, Advisors

	1973-74	1974-75
President	Dan Mosher	Janet Jones
Vice-President	Peg Stanley	Dale Sloan
Secretary-Treasurer	Janet Jones	Marvene Humble

Twelve new members were initiated into this chapter.

ALPHA ZETA [1969] - Indiana State University, Terre Haute, Indiana 47809

Dr. Lawrence Poorman, Advisor	1973-74	1974-75
President	Danny Hogg	Robert Black
Vice-President	Mitzy Schwindel	Martha White
Secretary-Treasurer	Janet Martin	Patricia Kelley

Alpha Zeta chapter inducted 43 new members during the year.

ALPHA ETA [1969] - Olivet College, Olivet, Michigan 49076

Dr. Richard Fleming, Advisor	1973-74	1974-75
President	Edith Rosenthaler	William Blair
Vice-President	Scott Cobel	John Jones
Secretary	Janice Hatfield	Janice Hatfield
Treasurer	Lloyd Holm	Marcia Hobday

This was an important year for the Alpha Eta chapter because they built their group from two members to twenty-five. They had regular meetings and activities. Initiations were held in September and in April. They sponsored a convocation for the student body in February. They are hoping to receive money from the student government so that they can invite speakers to campus.

ANNE ARUNDEL [1970] - Anne Arundel Community College, Arnold, Maryland 21012

Professor C. Wayne Ehler, Advisor	1973-74	1974-75
President	RoxAnna Thompson	
Vice-President	Edward W. S. Hull	
Secretary	Mary C. Rodrigues	
Treasurer	Gail Kinkade	

Nine new members were inducted into this chapter.

ALPHA THETA [1970] - Asbury College, Wilmore, Kentucky 40390

Professor Dan W. Easley, Advisor	1973-74	1974-75
President	Sandra Kay Phillips	Edwin Walker
Vice-President	Jack R. Bennick	Jack R. Bennick
Secretary	Sharon Runyon	Cindy Eberhardt
Treasurer	Ruth Sturgin	Karen Thomas

This was an active year for Alpha Theta chapter. Eighteen new members and one faculty member were initiated into the chapter. The chapter had an entry in the homecoming parade, a special display in the cafeteria, and a booth in the Country Fair.

Candy bars and used books were sold to raise money. The chapter helped furnish the lounge in the science building. They have started to give a "Student of the Quarter" award to a deserving senior.

Students from Transylvania and Centre Colleges were invited to special lectures on radionuclides and on energy. Three delegates attended the national convention.

ILLINOIS CENTRAL [1970] - Illinois Central College, East Peoria, Illinois 61611

Professors Charles N. Wright and Doris Kolb, Advisors

	1973-74	1974-75
President		Steven Richards
Vice-President		Cathy Lynn Switzer
Secretary		Joan Besing
Treasurer		Linda Berkey

Thirty-nine new members were initiated into the chapter. The chapter became active in March, held a dinner meeting, and began publishing a newsletter.

ALPHA IOTA [1970] - University of Wisconsin - La Crosse, La Crosse, Wisconsin 54601

Professors Allen C. Nelson and Larry Nutter, Advisors

	1973-74	1974-75
President	Louise Cheng	Steven J. Buelow
Vice-President	Jeffery Nielson	Peter Donndelinger
Secretary-Treasurer	Anne Wildenburg	Kay Middlecamp
Historian	Edna Spangler	Eileen Skibba

The chapter initiated 57 new members. They sponsored two speakers during the year, one on the use of computers in science and the other on kidney transplants. The chapter donated \$100 to Wisconsin Special Olympics in relationship to the mentally retarded children.

ALPHA KAPPA [1970] - Indiana State University - Evansville, Evansville, Indiana 47712

Professor Melvin Denner, Advisor

	1973-74	1974-75
President	Tom Cornils	
Vice-President	Michael Niemeier	
Secretary-Treasurer	Davic McIntosh	

Twenty-seven new members were initiated into this chapter.

ALPHA LAMBDA [1970] - Suffolk University, Boston, Massachusetts 02114

Professors Maria Bonaventura and William Buckingham, Advisors

	1973-74	1974-75
President	William Probst	Robert Ayoub
Vice-President	Maryanne Sterite	Helen Orcutt
Secretary	Dr. Maria Bonaventura	Dr. Maria Bonaventura
Treasurer	Mr. William Buckingham	Mr. William Buckingham

The annual Sigma Zeta, Sigma Xi, Science Club, and Psychology Club banquet was held in April. The guest lecturer was Dr. Charles H.W. Foster, Secretary of Environmental Affairs, Commonwealth of Massachusetts. The chapter inducted sixteen new members, the largest student group in the chapter's four year history.

ALPHA MU [1971] - Immaculata College, Immaculata, Pennsylvania 19345

Sister Maria Socorro, Advisor

	1973-74	1974-75
President	Madeline Jackson	Jacqueline L. Goelz
Vice-President	Patricia Simpson	Anne Marie Chester
Secretary	Veronica O'Donnell	Joanne Bauer
Treasurer	Margaret Gill	Debra Kute

Alpha Mu chapter initiated fifteen new members this year.

ALPHA NU [1971] - Oglethorpe College, Atlanta, Georgia 30319

Dr. Roy Goslin, Advisor

No report was received from this chapter.

ALPHA XI [1971] - Clinch Valley College of the University of Virginia, Wise, Virginia 24293

Drs. Van Daniel and George Culbertson, Advisors

	1973-74	1974-75
President	Laverne Stallard	Robert Bond
Vice-President	Merenda Mullins	James Cox
Secretary-Treasurer	Judy Charlene Shortt	Tommy Kilgore

Fifteen new members were initiated into this chapter.

ALPHA OMICRON [1971] - Baptist College at Charleston, Charleston, South Carolina 29411

Drs. Clarence Chesnutt and Fred Worthy, Advisors

	1973-74	1974-75
President	Don Hughes	Charles R. Tye
Vice-President	Robert Heatley	
Secretary-Treasurer	Fanourioj Ferderigoi	Sara Sanders

Alpha Omicron had the distinction of hosting the 45th national convention in historic Charleston. To help the delegates enjoy their stay, a package of information concerning places to see, good restaurants, and available tours was prepared for each delegate. All who attended will agree that the members did a fine job as hosts. A paper was presented by Dieter Bartschat. During the year, seven new members were initiated into the chapter.

ALPHA PI [1972] - Trevecca Nazarene College, Nashville, Tennessee 37210

Professor John Dix, Advisor

	1973-74	
President	Beth Greathouse	
Vice-President	Kevin Beard	
Secretary	Linda Stover	
Treasurer	Diane Gabriel	

No new members were reported from this chapter.

ALPHA RHO [1972] - Stonehill College, North Easton, Massachusetts 02356

Professor Sandra McAlister, Advisor

	1973-74	1974-75
President	Barbara Healey	Anne Marie Pilch
Vice-President	Donna Catalano	Mary Baptiste
Secretary	Sharon Lefkowitz	Susan Raposa
Treasurer	Joanne Fox	Charles Schein

They initiated eleven students and one faculty as new members.

ALPHA SIGMA [1972] - Dakota Wesleyan University, Mitchell, South Dakota 57301

No report was received from this chapter.

ALPHA TAU [1973] - Annhurst College, Woodstock, Connecticut 06281

Sister Anne Celine and Professor Gerda Harrington, Advisors

	1973-74	1974-75
President	Ann Hazuka	Kathy Bourque
Vice-President	Elaine Labelle	Jane Briere
Secretary	Madalene Chartier	Ann Hazuka
Treasurer	Jane Briere	

Alpha Tau chapter was installed by Dr. Homer D. Paschall on November 15, 1973. There were twenty charter members - fourteen student members and six faculty members. During the year, interest centered on topics from the senior theses. Some of these were: a study of acupuncture, the chemistry of plant hormones, the study and applications of eigenvectors and eigenvalues, and the relationship between linear algebra and differential equations.