70th Annual Meeting, 1986. Program

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PROGRAM
Arkansas Academy of Science

Seventyth Annual Meeting
OUACHITA BAPTIST UNIVERSITY
Arkadelphia, Arkansas
Meeting concurrently with sessions of
The Collegiate Academy of Science

Friday, 4 April

SENIOR AND COLLEGIATE ACADEMIES -- Registration
SENIOR ACADEMY -- Executive Board Meeting
SENIOR ACADEMY -- First General Business Meeting
SENIOR AND COLLEGIATE ACADEMIES: Papers [Concurrent Sessions]:
  Aquatic and Environment I
  Botany
  Vertebrate Zoology I
  Chemistry I
  Biomedical
  Microbiology
SCIENCE EDUCATION COMMITTEE
SENIOR AND COLLEGIATE ACADEMIES -- Banquet
POST BANQUET SPEAKER -- Dr. Martin Rosenberg
  Smith Kline and French Laboratories

Saturday, 5 April

SENIOR AND COLLEGIATE ACADEMIES -- Registration
SENIOR AND COLLEGIATE ACADEMIES -- Papers [Concurrent Sessions]:
  Aquatic and Environment II
  Vertebrate Zoology II
  Chemistry II
  General
  Invertebrate Zoology
  Science Education
SENIOR ACADEMY -- Second General Business Meeting
AQUATIC AND ENVIRONMENTAL I
Session Chairperson: John Geise

SURVEY OF PERIODICAL CICADA EMERGENCE SITES IN WASHINGTON COUNTY, ARKANSAS, AND POSSIBLE ECOLOGICAL IMPLICATIONS.
Douglas A. James, Kimberly G. Smith and Kathy S. Williams, Department of Zoology, University of Arkansas, Fayetteville, AR 72701.

POPULATION STRUCTURE OF CREOLE (Etheostoma collettei) AND REDFIN (E. whipplei) DARTERS IN THE UPPER SALINE RIVER, SALINE COUNTY, ARKANSAS.
John D. Rickett, Biology Department, University of Arkansas at Little Rock, Little Rock, AR 72204.

TWO ATYPICAL PRECIPITATION SAMPLES AND THE ASSOCIATED AIR QUALITY AND METEOROLOGICAL CONDITIONS.

RELATIONSHIP BETWEEN DIAMETER BREAST HIGH AND DIAMETER NEAR GROUND LINE FOR HARDWOOD SPECIES IN ARKANSAS.
Richard A. Kluender and Jimmy L. Yeiser, Arkansas Agricultural Experiment Station, Forest Resources Department, University of Arkansas, Monticello, AR 71655.

EFFECTS OF JUGLONE (5-HYDROXY-1,4-NAPHTHOQUINONE) ON THE ALGAE Anabaena Fls-aquae, Nostoc Commune and Scenedesmus Acuminatus.
V. Diane Randall, Jacksonville Wastewater Utility, P.O. Box 623, Jacksonville, AR 72076, and J. D. Bragg, Biology Department, Henderson State University, Arkadelphia, AR 71923.

A FOREST DATA BASE FOR ARKANSAS.
Richard A. Kluender and E. Wesley McCoy, Forest Resources Department, University of Arkansas at Monticello, Monticello, AR 71655.

TAGGING AND MARKING CRAWFISH (Procambarus clarkii) IN A POPULATION ESTIMATION STUDY.
Frank Meriwether, Agricultural Experiment Station, University of Arkansas at Pine Bluff, Pine Bluff, AR 71601.

EFFECT OF STUNTING ON THE GROWTH OF BLUE TILAPIA (Oreochromis aureus, CICHLIDAE).
Les Torrans and Fran Lowell, Department of Agriculture, University of Arkansas at Pine Bluff, Pine Bluff, AR 71601.

EVALUATION OF A FIN-RAY SCARRING TECHNIQUE FOR INDIVIDUALLY MARKING FISH.
Les Torrans, Fran Lowell, Department of Agriculture, University of Arkansas at Pine Bluff, Pine Bluff, AR 71601 and Howard Clemens, Department of Zoology, University of Oklahoma, Norman, OK 73069.

A NEW RECORD OF PARASITISM IN THE FINTAIL DARTER, Etheostoma flabellare (PERCIDAE: ETHEOSTOMATINI).
Stephen R. Moulton II, Lawrence W. Hinck, and George L. Harp, Department of Biological Sciences, Arkansas State University, State University, AR 72467.

BOTANY
Session Chairperson: Paul Raines

REPRODUCTIVE BIOLOGY OF ISOLATED FERN GAMETOPHYES.
Carol Jacobs Peck, Department of Natural Sciences, University of Arkansas at Pine Bluff, Pine Bluff, AR 71601.

ECOLOGICAL ANALYSIS OF DISJUNCT POPULATIONS OF THE RARE SHRUB Nevinia alabamensis.
Robert D. Wright and Alice A. Long, University of Central Arkansas, Conway, AR 72032.

THE MORPHOLOGY OF Acremonium coenophialum SAMUELS, THE SYMBIOTIC FUNGAL ENDOPHYTE OF TALL FESCUE.
Maurice G. Kive, Thomas J. Lynch and Alvan A. Karlin, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204.

*PRELIMINARY ISOZYME STUDIES IN TALL FESCUE.
Alvan A. Karlin, Elizabeth A. Rush, Thomas J. Lynch and Maurice Kive, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204.

PROPOSED CONSORTIUM EFFORT TOWARD CONTINUANCE OF ARKANSAS FLORA PROJECT.

BLUE-EYED GRASS (Sisyrinchium: Iridaceae) OF ARKANSAS.
Kathleen L. Hornberger, Department of Botany and Microbiology, SE-401, University of Arkansas, Fayetteville, AR 72701.

VASCULAR PLANTS OF CROWLEY'S RIDGE IN NORTH-EASTERN ARKANSAS.
Edward L. Richards, Department of Biological Science, Arkansas State University, State University, AR 72467.

SECOND LOCALITY FOR Dryopteris Cartusiana IN ARKANSAS.
James H. Peck, University of Arkansas at Little Rock, Little Rock, AR 72204.

WOODY VEGETATION OF THE CRYSTAL MOUNTAIN REGION.
Durwood Mayo and P. L. Raines, Amity High School, Amity, AR, and Arkansas State University, State University, 72467.

THE ROLE OF FLAGELLAR ANCHORAGE IN CELL SWIMMING IN THE AMOEBO-FLAGELLATE CELL OF Protosporangium articulatum.
Frederick W. Spiegel, Department of Botany and Microbiology, University of Arkansas, Fayetteville, AR 72701.

AUTOTRIPLOIDY IN ERYTHRIONIUM ROSTRATUM (LILIACEAE): REPRODUCTION, DISTRIBUTION AND ORIGIN.
Bruce L. Carr, Department of Botany and Microbiology, University of Arkansas, Fayetteville, AR 72701.

VERTEBRATE ZOOLOGY I
Session Chairperson: Peggy Dorris

A SURVEY OF THE INTERIOR LEAST TERN ON THE ARKANSAS AND WHITE RIVERS.
*THE EFFECTS OF LOW pH ON LACTATE DEHYDROGENASE KINETICS OF DIVING AND NONDIVING REPTILES.
Salim R. Hurley and Dennis A. Baeyens, Biology Department, University of Arkansas at Little Rock, Little Rock, AR 72204.

*INTERSPECIFIC CORRELATIONS OF HARVEST AND PRICE AS PARAMETERS FOR FUR HARVEST ANALYSIS.
Anita J. Giggleman, James H. Peck, and Gary A. Heidt, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204.

FANUAL USE OF ABANDONED MINES IN ARKANSAS: VETERbrATE TAXA.
Darrel R. Heath, Gary A. Heidt and David A. Saugeyer, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204, and the U.S. Forest Service, Mt. Ida, AR 71957.

SURVEY OF BATS IN THE OUACHITA MOUNTAINS OF ARKANSAS.
David A. Saugeyer, Gary A. Heidt, and Darrell R. Heath, U.S. Forest Service, Mt. Ida, AR 71957, and Department of Biology, University of Arkansas at Little Rock, AR 72204.

POPULATION DECLINE OF THE ENDANGERED INDIANA BAT, Myotis sodalis, IN ARKANSAS.
Michael J. Harvey, Department of Biology, Tennessee Technological University, Cookeville, TN 38505, and V. Rick McDaniel, Department of Biological Science, Arkansas State University, State University, AR 72467.

AN ANALYSIS OF BOBWHITE QUAIL POPULATION TRENDS IN ARKANSAS 1967-1983.
Charles R. Preston, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204.

MODULATION OF THE IMMUNE RESPONSE IN QUAIL BY METHYL PARATHION.
Dale V. Ferguson and Steve Koehler, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204.

TOE PAD MORPHOLOGY IN PLETHODONTID SALAMANDERS FROM ARKANSAS.
Stanley E. Trauth and J. D. Wilhide, Department of Biological Sciences, Arkansas State University, State University, AR 72467.

ELEMENTS OF THE BAT FAUNA OF SOUTHWESTERN ARKANSAS.
V. Rick McDaniel, Tim W. Steward, Department of Biology, Arkansas State University, State University, AR 72467, and David A. Saugeyer, U.S. Forest Service, P.O. Box 235, Mt. Ida, AR 71957, and Daniel R. England, Department of Biology, Southern Arkansas University, Magnolia, AR 71753.

ADDITIONAL RECORDS OF THE BAT BUG, Cimex pilosellus, ON ARKANSAS BATS.
V. Rick McDaniel, Tim W. Steward, Department of Biology, Arkansas State University, State University, AR 72467, Renn Tumlinson, Department of Zoology, Oklahoma State University, Stillwater, OK 74078, and Daniel R. England, Department of Biology, Southern Arkansas University, Magnolia, AR 71753.

**CHEMISTRY I**

**THE PREPARATION OF NOVEL 4-METHYL-5-ARYLOXY PRIMAQUINE ANTIMALARIALS.**
Thomas E. Goodwin, Kevin Raney, Christine D. LaRocca, Department of Chemistry, Hendrix College, Conway, AR 72032.

**MOBILITY OF NEGATIVE ION IMPURITY CENTERS IN NaCl AND THERMOLUMINESCENCE IN α Al13−.**
Louis P. Caldarera, Pradip Bandyopadhyay, Chemistry Department, Hendrix College, Conway, AR 72032.

**THE PREPARATION OF POTENTIAL ANTIFUNGAL AGENTS.**
D. Kilgore and T. E. Goodwin, Department of Chemistry, Hendrix College, Conway, AR 72032.

**ELECTROCHEMICAL STUDIES OF SOME DIHALOGENATED NICOTINIC ACIDS IN AQUEOUS AND APHRODIC MEDIA.**

**VIBRATION RELAXATION IN A PORPHYRIN RING MODEL.**
Roger L. Lafarlette and Ralph J. Wolf, Department of Chemistry, University of Arkansas at Little Rock, Little Rock, AR 72204.

**COLLISION INDUCED VIBRATIONAL DEACTIVATION OF METHANE. A COMPARISON BETWEEN GAS PHASE AND GAS-SURFACE COLLISIONS.**
Lisa D. Schrekenhofer and Ralph J. Wolf, Department of Chemistry, University of Arkansas at Little Rock, Little Rock, AR 72204.

**SEMICLASSICAL EIGENVALUES.**
Ricardo C. Davis and Ralph J. Wolf, Department of Chemistry, University of Arkansas at Little Rock, Little Rock, AR 72204.

**EFFECT OF STRETCH-BEND INTERACTIONS ON VIBRATIONAL RELAXATION.**
Devinder S. Bhatia and Ralph J. Wolf, Department of Chemistry, University of Arkansas at Little Rock, Little Rock, AR 72204.

**SYNTHESIS AND INFRARED SPECTRUM OF HBr: A PHYSICAL CHEMISTRY LABORATORY.**

**SYNTHESIS OF POLYURETHANE FOAMS FROM WHEY PERMEATE.**
Skip Williams, Tito Viswanathan, University of Arkansas at Little Rock, 33rd & University, Little Rock, AR 72204.

**A CHROMATOGRAPHIC METHOD FOR THE SEPARATION AND PURIFICATION OF TRIARYL PHOSPHATES.**
Kervin Wynn, Michael A. Heitcamp, and Carl E. Cerniglia, University of Arkansas at Pine Bluff, Pine Bluff, AR 71601, and National Center for Toxicological Research, Jefferson, AR.

**IMPLEMENTATION OF THE MICROSCALE ORGANIC CHEMISTRY LABORATORY.**
T. E. Goodwin, Department of Chemistry, Hendrix College, Conway, AR 72032.

**BIOMEDICAL**

Session Chairperson: David Straub

**THE NATURE OF BINDING OF CYTOCHROME C TO THE MITOCHONDRIAL MEMBRANE.**
Veronica M. Nehus and Randall A. Kopper, Chemistry Department, Hendrix College, Conway, AR 72032.

**PROBING SECONDARY STRUCTURE OF OVALBUMIN mRNA BY METHYLATION AND REVERSE TRANSCRIPTION.**
James W. Bryan, Randall A. Kopper, Chemistry Department, Hendrix College, Conway, AR 72032, and Charles D. Liarakos,
ELUCIDATION OF SECONDARY STRUCTURE OF OVUMBIN mRNA USING PSORALEN CROS LINKING AND REVERSE TRANSCRIPTION. 
Michael D. Kyzer, Randall A. Kopper, Department of Chemistry, Hendrix College, Conway, AR 72032; and Charles D. Liarakos, Biochemistry Department, University of Arkansas for Medical Sciences, Little Rock, AR 72205.

CHANGES IN PROTEINS AND NUCLEIC ACIDS DURING DEVELOPMENT GROWTH. 
Nora Leou and Randall Kopper, Chemistry Department, Hendrix College, Conway, AR 72032.

SURFACE PROTEIN EXPRESSION ON Tetrathymena thermophila. 
H. D. Love, A. A. Nash, and G. A. Bannon, University of Arkansas for Medical Sciences, Department of Biochemistry, College of Medicine, 4301 W. Markham, Little Rock, AR 72205.

*EFFECTS OF BODY WEIGHT ON DRUG DISCRIMINATION IN THE PIGEON. 
Billy W. Massey, Department of Biology, University of Central Arkansas, Conway, AR 72032, and Donald E. McMillan, Department of Pharmacology and Interdisciplinary Toxicology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, AR 72205.

*HISTORY AND USES OF EPHEDRINE. 
Michael D. Massey, and Richard Walker, Department of Natural Sciences, University of Arkansas at Pine Bluff, Pine Bluff, AR 71601.

METHEMOGLOBIN REDUCTION INHIBITION BY DEOXYH EMOGLOBIN. 
Ali Mansouri, University of Arkansas for Medical Sciences and Little Rock Veterans Administration Medical Center, Little Rock, AR 72205.

DOPAMINE-INDUCED SENSITIVITY CHANGE TO TRH IN PITUITARY LACTOTROPES. 
John D. Peck and Jimmy D. Neill, Department of Biology, University of Central Arkansas, Conway, AR 72032, and Department of Physiology and Biophysics, University of Alabama in Birmingham, Birmingham, AL 35294.

PLASMA CORTICOSTEROIDE CONCENTRATIONS IN COCKERELS BEFORE AND AFTER RUNNING. 
Stanley N. David, Department of Biological Sciences, Arkansas State University, State University, AR 72467.

AQUATIC AND ENVIRONMENTAL II 
Session Chairperson: Henry Robinson

ANOMALOUS APPEARANCE OF Cs-137 and Co-58 IN DAR-DANELLE RESERVOIR. 
David M. Chittenden, Department of Chemistry, Arkansas State University, State University, AR 72467.

PARTICULATE MATTER IN FAYETTEVILLE RAINS. 
Pat Thasan and Kenneth F. Steele, Department of Geology, University of Arkansas, Fayetteville, AR 72701.

AGE AND GROWTH OF REDEAR SUNFISH, Lepomis microlophus (GUN THER), FROM BOB KIDD LAKE. 
Rex R. Roberg, Thoni T. Prabhataran and Raj V. Kilambi, Department of Zoology, University of Arkansas, Fayetteville, AR 72701.

USEFULNESS OF MICROFICHE READER/PRINTER FOR STUDYING FISH SCALES. 
Raj V. Kilambi and Marvin L. Galloway, Department of Zoology, University of Arkansas, Fayetteville, AR 72701.

A NEW CAVE CRAYFISH POPULATION IN ARKANSAS. 

CONTINUED DDT PERSISTENCE IN MISSISSIPPI RIVER DELTA STREAMS: A CASE STUDY. 
Stephen A. Sewell and Luther A. Knight, Jr., Department of Biology, University of Mississippi, University, MS 38677.

MODIFICATION OF STREPTOMYCIN BY A SOIL BACTERIUM. 

*INJURED BACTERIA IN POULTRY PRODUCTS. 

THYMIDYLATE SYNTHETASE ACTIVITY DURING GROWTH AND DEVELOPMENT OF THE CELLULAR SLIME MOLD, Dictyostelium discoideum. 
Jo Ann Heslip, University of Arkansas at Pine Bluff, Pine Bluff, AR 71601, and Arthur C. Washington and S. M. Hill, Prairie View A&M University, Prairie View, TX 77446.

ADHERENCE AS A VIRULENCE FACTOR OF Salmonella enteritidis. 
Jaber Aslanzadeh and Leo J. Paulissen, Department of Botany and Microbiology, University of Arkansas, Fayetteville, AR 72701.

EFFECTS OF pH ON THE EXPRESSION OF FLUORIDE RESISTANCE IN Streptococcus mutans. 
Karen A. Lau, Susan M. Brussock, and Timothy A. Kral, University of Arkansas, Fayetteville, AR 72701.

TRANSFORMATION OF FLUORIDE RESISTANCE IN Streptococcus mutans. Peggy E. Chansley and Timothy A. Kral, University of Arkansas, Fayetteville, AR 72701.

THE EFFECT OF LIVE AND KILLED Trichomonas vaginalis ON THE IMMUNE RESPONSE OF MICE. 
Terry Hostetler, Roger Rank, and James Daly, University of Arkansas for Medical Sciences, Little Rock, AR 72205.
ACCELERATED TRANSPORT OF MONOMERIC ALUMINUM IN THE HEADWATERS OF TWO OUACHITA MOUNTAIN STREAMS.
J. Nix, Department of Chemistry, Ouachita Baptist University, Arkadelphia, AR 71923.

VERTEBRATE ZOOLOGY II
Session Chairperson: Perry M. Johnston

MORPHOLOGICAL VARIATION IN A POPULATION OF THE WESTERN LESSER SIREN (Siren intermedia nettingi GOIN).
Derrick W. Sugg, D. R. Heath, and A. A. Karlin, University of Arkansas at Little Rock, Biology Department, 33rd & University Avenue, Little Rock, AR 72204.

HARVEST TRENDS OF THE BOBCAT (Felis rufus) IN ARKANSAS.
Renn Tumilson and V. Rick McDaniel, Department of Zoology, Oklahoma State University, Stillwater, OK 74078, and Department of Biology, Arkansas State University, State University, AR 72467.

A MODEL FOR ULTRAVIOLET-INDUCED CHROMATID ABERRATION PRODUCTION IN VERTEBRATE CELLS.
Susan Kulp and H. Gaston Griggs, Department of Biology, John Brown University, Siloam Springs, AR 72761.

THE RIVER OTTER IN ARKANSAS. IV. WINTER FOOD HABITS IN EASTERN ARKANSAS.
Renn Tumilson, Anthony W. King, and V. Rick McDaniel, Department of Zoology, Oklahoma State University, Stillwater, OK 74078, Graduate Program in Ecology, University of Tennessee, Knoxville, TN 37996, and Department of Biology, Arkansas State University, State University, AR 72467.

OBSERVATIONS OF MALE COMBAT DANCE IN THE COTTONMOUTH (A. piscivorus).
Bart Folgeman, William Byrd, and Earl Hanebrink, Department of Biological Science, Arkansas State University, State University, AR 72467.

CHEMISTRY II
Session Chairperson: Warfield Teague

*OPTIMIZATION FOR KINETIC STUDY OF SUCCINATE DEHYDROGENASE IN RAT LIVER.
Collie B. Shaw, Tara L. Chronister, and John D. Peck, Department of Biology, University of Central Arkansas, Conway, AR 72030.

pH-DEPENDED SUPEROXIDE DISMUTASE (SOD)-LIKE ACTIVITY OF COPPER(II) ETHYLENEDIAMINE-TETRAACETIC ACID (CUDTA).
William M. Willingham, John R. J. Sorenson, Darla Long and Anita Groves. Department of Natural Sciences, University of Arkansas at Pine Bluff, Pine Bluff, AR 71601, Department of Biopharmaceutical Sciences, University of Arkansas for Medical Sciences, Little Rock, AR 72205.

*SYNTHESIS OF NAPHTHYL CHROMANONES.
Raymond Hawkins and Uttam K. Jagwani, Natural Sciences Department, University of Arkansas at Pine Bluff, AR 71601.

THE HIGH TEMPERATURE CHEMISTRY OF THE CALCIUM-OXYGEN-SULFUR SYSTEM ON METAL SILICATE SURFACES.
J. Edward Bennett and Luis Morales, Department of Chemistry, Arkansas State University, State University, AR 72467.

CARBON-14 ISOTOPE EFFECTS IN THE BROMINATION OF SUBSTITUTED STYRENE, X-C6H5-CH=CH2. Pandurang Kokil and Arthur Fry, Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, AR 72701.

*DETERMINATION OF TRACE CHROMIUM IN PLANT MATERIALS AND YEAST BY ELECTROTHERMAL ATOMIC ABSORPTION SPECTROSCOPY.
Terry G. Fletcher and Edmond W. Wilson, Jr., Department of Physical Science, Harding University, Searcy, AR 72143.

HYDROGEN TRANSFER CATALYSIS WITH POLYMER BOUND ANTHRANILIC ACID Pd(II) COMPLEXES.
Laurence J. Boucher and Cindy L. Elder, Departments of Chemistry, Arkansas State University, Jonesboro, AR 72401, and Western Kentucky University, Bowling Green, KY 42101.

**DEVELOPMENT OF A SENSITIVE METHOD TO MEASURE AFLATOXIN B1, B2, G1 AND G2 USING ELECTROCHEMISTRY.

CONCANAVALIN A-NONBINDING ENZYMES OF Crotalus Scutulatus Scutulatus VENOM.
C. K. Childs, M. W. Hinson, D. H. Sifford, and B. D. Johnson, College of Arts and Sciences, Arkansas State University, State University, AR 72467.

ABSOLUTE CONFIGURATION OF THE CACTUS ALKALOIDS ANHALONIDINE AND PELLTOINE.
Richard B. Walker, Department of Natural Sciences, University of Arkansas at Pine Bluff, Pine Bluff, AR 71601, and John C. Craig, Department of Pharmaceutical Chemistry, University of California at San Francisco, San Francisco, CA 94122.

*BOMB CALORIMETRY: THE ENERGY CONTENT OF A HAMBURGER.
Bret Shirley and Edmond W. Wilson, Jr., Department of Physical Science, Harding University, Searcy, AR 72143.

GENERAL
Session Chairperson: Clark McCarty

STYLE AND TIMING OF DISPLACEMENT ALONG THE WASHITA VALLEY FAULT, SOUTHERN OKLAHOMA.
Randy Tom Cox and Roy VanArsdale, Department of Geology, University of Arkansas, Fayetteville, AR 72701.

DEPOSITIONAL HISTORY OF THE ST. JOE-BOONE FORMATIONS IN NORTHERN ARKANSAS.
Phillip R. Shelby, Department of Geology, University of Arkansas, Fayetteville, AR 72701.

COMPARISON OF THE SYMBIOTIC FAUNA OF THE FAMILY PLETHODONTIDAE IN THE OUACHITA MOUNTAINS OF WESTERN ARKANSAS.
Douglas A. Winter and Wojciech M. Zawada, Hendrix College, Conway, AR 72032.

PENETRATING RADIATION IN THE LOWER ARKANSAS AND WHITE RIVER VALLEYS OF ARKANSAS.
C. Epperson, S. Meiners and D. Swindle, University of Arkansas for Medical Sciences, Little Rock, AR 72205.

X-RAY FLUORESCENCE SPECTROSCOPY OF TREATED FENCE POSTS.
H. B. Eldridge, Physics Department, University of Central Arkansas, Conway, AR 72032, and N. C. Jacobus, Applications Laboratory, EG&G-ORTEC, Oak Ridge, TN 37830.
THE EFFECTS OF THE CORIOLIS FORCE AND AIR RESISTANCE ON FALLING BODIES.
Ananda Shastri, Department of Physics, University of Central Arkansas, Conway, AR 72032.

LEAST-SQUARES FITTING A SEMI-EMPIRICAL FUNCTION.
Jeff Sharp, Department of Physics, University of Central Arkansas, Conway, AR 72032.

INVERTEBRATE ZOOLOGY
Session Chairperson: Claudia Bailey

DISTRIBUTION AND SEASONAL OCCURRENCE OF THE COREOIDEA (INSECTA: HEMIPTERA) OF ARKANSAS.
Harvey E. Barton, Arkansas State University, P.O. Box 501, State University, AR 72467, and Linda A. Lee, Pocahontas High School, Pocahontas, AR 72455.

*POST EMERGENCE ASPECTS OF THE LIFE CYCLE OF Magicicada nasina.*
Johnny T. Stine, Department of Zoology, University of Arkansas, Fayetteville, AR 72701.

ANATOMY OF ADULT MALE AND FEMALE REPRODUCTIVE SYSTEMS OF Meneces insertus (SAY) (HEMIPITERA: PENTATOMIDAE).
Linda A. Lee, Pocahontas High School, Pocahontas, AR 72455, and Harvey E. Barton, Arkansas State University, P.O. Box 501, State University, AR 72467.

A PRELIMINARY STUDY OF SPECIES OF SPIDERS COLLECTED IN PIT TRAPS IN DREW COUNTY AND BRADLEY COUNTY, ARKANSAS WATERSHEDS.
Peggy Rae Dorris, Department of Biology, Henderson State University, Arkadelphia, AR 71923, and Lynn Thompson, Forestry Department, University of Arkansas at Monticello, Monticello, AR 71655.

PROTRACTED OVIPOSITION BY Hetaerina titia (DRURY) (ZYGOPTERA: CALOPTERYGIDAE).
George L. Harp, Department of Biological Sciences, Arkansas State University, State University, AR 72467.

A TECHNIQUE FOR EXAMINING THE ZYGOPTERAN MESOTIGMAL COMPLEX OF THREE SPECIES OF Argia USING SCANNING ELECTRON MICROSCOPY.
Stephen R. Moulton II, Stanley E. Trauth, and George L. Harp, Department of Biological Sciences, Arkansas State University, State University, AR 72467.

GENETIC VARIABILITY IN PERIODIC CICADIDS FROM NORTHERN ARKANSAS.
Derrick W. Sugg, A. A. Karlin, E. A. Rush, K. Smith, C. Williams, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204, and Department of Zoology, University of Arkansas at Fayetteville, Fayetteville, AR 72701.

SPECIAL ADAPTATIONS OF ORB WEAVERS AND PREY.
Peggy Rae Dorris, Henderson State University, Arkadelphia, AR 71923.

A CHECKLIST OF THE CERAMYCIDA OF ARKANSAS.
Robert T. Allen and C. E. Carlton, Department of Entomology, University of Arkansas, Fayetteville, AR 72701.

SELECTED BIOLOGICAL ASPECTS OF Gomphus ozarkensis WESTFALL (ODONATA: GOMPHIDAE).
Greg R. Susanke and George L. Harp, Department of Biological Sciences, Arkansas State University, State University, AR 72467.

SCIENCE EDUCATION
Session Chairperson: Dick Hansen

A STUDY OF COLLEGE AND UNIVERSITY PROGRAMS IN GENERAL EDUCATION BIOLOGY.
Neal Buffalo, Department of Biology, University of Central Arkansas, UCA Box 1721, Conway, AR 72032.

PRELIMINARY REPORT ON THE USE OF A COMPUTERIZED PHYSICAL SCIENCE TUTORIAL AT UCA.
Stephen R. Addison, Maurice Ayers, Ralva Bass, Denver Prince, and Hudson B. Eldridge, Physics Department, The University of Central Arkansas, Conway, AR 72032.

AN INTERACTIVE DYNAMICS TUTORIAL.
H. B. Eldridge and H. L. Pray, Physics Department, University of Central Arkansas, Conway, AR 72032.

AN INTRODUCTORY CHEMISTRY COURSE.
Richard S. Mitchell, Department of Chemistry, Arkansas State University, State University, AR 72467.

NEW STANDARDS FOR ARKANSAS: CONTINUING STUDY (CHEM).
Robbin C. Anderson, Chemistry Department, University of Arkansas, Fayetteville, AR 72701.

TEACHING ELEMENTARY SCIENCE: A MODEL FOR EFFECTIVE IN-SERVICE TRAINING.
Glenn Good and Joe Jeffer, Departments of Physics and Chemistry, Ouachita Baptist University, Arkadelphia, AR 71923.

UNIVERSITY OF ARKANSAS AT MONTICELLO'S 1985 SUMMER SCIENCE INSTITUTE.
Eric Sundell, Department of Natural Sciences, University of Arkansas at Monticello, Monticello, AR 71655.

ACTIVITIES AT UALR IN SUPPORT OF SCIENCE EDUCATION.
Richard Hanson and Fred Watson, University of Arkansas at Little Rock, 33rd and University Avenue, Little Rock, AR 72204.

A SUMMER SCIENCE PROGRAM THAT LASTS ALL YEAR.
Fred Watson and Richard Hanson, University of Arkansas at Little Rock, 33rd and University Avenue, Little Rock, AR 72204.