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SECTION PROGRAMS

[*Undergraduate student Competition

**Graduate Student Competition]

Friday, April 5, 1991

STUDENTS I: BOTANY/ECOLOGY/AQUATICS

Chairperson: Dr. E.E. Dale, University of Arkansas, Fayetteville

- *FLORA OF THE ST. FRANCIS NATIONAL FOREST.
Celia Ison and Don Culwell, Department of Biology, University of Central Arkansas, Conway, AR 72032.
- **CYANOBACTERIA OF RICE FIELDS IN CENTRAL ARKANSAS.
Laura K. Simpson, Joyce M. Hardin and Kelly K. Agnew, Department of Biology, Hendrix College, Conway, AR 72032.
- *A SURVEY OF THE VASCULAR FLORA OF BAXTER COUNTY, ARKANSAS.
Philip E. Hyatt, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701.
- *EVALUATION OF *Aposphaeria amaranthi* AS A BIOHERBICIDE FOR PIGWEED (*Amaranthus spp.*).
Angel Mintz and G.J. Weidemann, Department of Plant Pathology, PTSC217, University of Arkansas, Fayetteville, AR 72701.
- *A CLADISTIC ANALYSIS OF EIGHT SPECIES OF *Lemna* (LEMNACEAE).
Kevin D. Golden and F.W. Spiegel, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701.
- **STUDY ON *Taxodium-Nyssa* SWAMP IN INDEPENDENCE COUNTY, ARKANSAS.
Kevin Rouse and Lisa Moxley, Natural Sciences and Mathematics Program, Arkansas College, Batesville, AR 72501 and Winifred Fraser, University of Texas School of Medicine at Galveston, TX 77550.
- **AN ANALYSIS OF STOMACH CONTENTS OF THE OUACHITA MADTOM (*Noturus lachneri*) in Streams of the Upper Saline Drainage.
Tim M. Patton and Mark L. Zornes, Fish and Wildlife Biology Program, Arkansas Tech University, Russellville, AR 72801.
- AN ECOLOGICAL ANALYSIS OF THE INTERTIDAL ZONE OF APPLEDORE ISLAND IN THE ISLES OF SHOALS, GULF OF MAINE.
Eric Haenni and Brian Segool, Department of Biology, Hendrix College, Conway, AR 72032.
- *THE EFFECTS OF TRANSFORMATION OF PATHOGENICITY ON *Colletotrichum gloeosporioides* F.SP. *malvae*.
C.L. Trout and D.O. TeBeest, Department of Plant Pathology, University of Arkansas, Fayetteville, AR 72701.
- **VERIFICATION OF REPRODUCTIVE PERIODICITY OF *Corbicula fluminea*, THE ASIATIC CLAM, IN THE SALINE RIVER, SALINE COUNTY, ARKANSAS.
Diana L. Saul and John D. Rickett, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204.
- THE EFFECT OF FLOODING ON THE WATER QUALITY OF LAKE CATHERINE THREE YEAR COMPARISON.
Grace Velasco, Lakeside High School, 4429 Malvern Rd., Hot Springs, AR 71901.
- *A SYNOPSIS OF THE NOTONECTIDAE OF ARKANSAS.
Stephen W. Chordas III and George L. Harp, Department of Biological Sciences, Arkansas State University, AR 72467.
- **PRELIMINARY SCANNING ELECTRON MICROSCOPY OBSERVATIONS ON THE ORIGIN AND MORPHOLOGY OF CALLUS

INDUCED FROM CULTIVATED RICE 'TEBONNET' SEEDS.
S. Wofford, M. Kleve, B. Wagner, B. Good and J. Peck, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204 and R. Dilday, USDA-ARS, P.O. Box 287, Stuttgart, AR 72160.

**PRELIMINARY OBSERVATIONS ON CALLUS INDUCTION AND PROTOPLAST ISOLATION FROM CULTIVATED RICE 'TEBONNET'.
B. Wagner, B. Good, S. Wofford, M. Kleve and J. Peck, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204 and R. Dilday, USDA-ARS, P.O. Box 287, Stuttgart, AR 72160.

BOTANY /BIOMEDICAL

Chairman: Dr. J.W. Wickliff, University of Arkansas, Fayetteville

- A FLORISTIC SURVEY OF THE MOIST SOIL UNITS AT HOLLA BEND NATIONAL WILDLIFE REFUGE.
Stephen A. Walker and George P. Johnson, Department of Biological Sciences, Arkansas Tech University, Russellville, AR 72801.
- FINAL REPORT ON FIVE-YEAR STUDY OF *Geocarpon minimum* AT WARREN PRAIRIE NATURAL AREA.
William M. Shepherd, Arkansas Natural Heritage Commission, Suite 200, The Heritage Center, 225 East Markham, Little Rock, AR 72201, Charles R. Preston, Department of Biology, University of Arkansas at Little Rock, 2801 S. University Ave., Little Rock, AR 72204 (current address: Department of Zoology, Denver Museum of Natural History, 2001 Colorado Boulevard, Denver, Colorado 80205) and Robert Steinauer, The Arkansas Nature Conservancy, 300 Spring Building, Suite 717, Little Rock, AR 72201.
- NEW BOTANIC DISCOVERIES IN THE OUACHITA MOUNTAIN REGION.
Vernon Bates, Consulting Botanist, P.O. Box 1473, Mena, AR 71953 and Albert B. Pittman, South Carolina Heritage Trust, P.O. Box 167, Columbia, SC 29202.
- VASCULAR FLORA OF PERRY COUNTY, ARKANSAS.
Donald E. Culwell, Department of Biology, University of Central Arkansas, Conway, AR 72032.
- KENAF - A POTENTIAL NEW CROP FOR ARKANSAS.
Lyell Thompson, Department of Agronomy, University of Arkansas, Fayetteville, AR 72701.
- SMALL-HEADED PIPEWORT (*Eriocaulon kornickiamum*) (ERIOCAULACEAE) IN ARKANSAS.
Gary E. Tucker, Ozark-St. Francis National Forest, Russellville, AR 72801.
- ANTHOCYANINS OF THE BIRD-FOOT VIOLET, *Viola pedata*.
Forrest E. Lane, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701.
- GEOTROPISM/GRAVITROPISM: FACT AND FANCY.
Forrest E. Lane, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701.
- A CROSS-SECTIONAL STUDY OF THE POSSIBLE HEALTH BENEFITS OF THREE TYPES OF EXERCISE REGIMENS.
L.F. Morgans and A.M. Johnson, Departments of Biology and Mathematics and Statistics, University of Arkansas at Little Rock, Little Rock, AR 72204.

Arkansas Academy of Science

LOCALIZATION OF AEROSOL DEPOSITION IN A SYMMETRICAL LUNG MODEL.

Sam Al-Zaaim, David L. Wankum, Department of Electronics and Instrumentation, University of Arkansas at Little Rock, Little Rock, AR 72204, and Jeff R. Hammersley, UAMS - Pulmonary Department, 4301 W. Markham, Little Rock, AR 72204.

MUTAGENICITIES OF HYDANTOIN SUBSTITUTED NITROAROMATIC COMPOUNDS IN *Salmonella typhimurium*.

E. Kim Fifer and Cheri Greer, Department of Biopharmaceutical Sciences, College of Pharmacy, University of Arkansas for Medical Sciences, Little Rock, AR 72205.

MUTAGENICITY OF DANTROLENE AND ITS METABOLITES IN *Salmonella*.

E. Kim Fifer, College of Pharmacy, University of Arkansas for Medical Sciences, Little Rock, AR 72205 and Bruce S. Hass, Division of Comparative Toxicology, National Center for Toxicological Research, Jefferson, Arkansas 72079.

MICROBIOLOGY

Chairman: Dr. T. A. Kral, University of Arkansas, Fayetteville

EFFECTS OF SURFACE-ACTIVE AGENTS ON TISSUE ATTACHMENT OF *Salmonella typhimurium*.

D.L. Lattin, P.J. Breen, C.M. Compadre, E.K. Fifer and H. Salari, College of Pharmacy, University of Arkansas for Medical Sciences, Little Rock, AR 72205.

ISOLATION AND POLYPEPTIDE CHARACTERIZATION OF SIMIAN VARICELLA VIRUS.

Thomas M. Fletcher III and Wayne Gray, Department of Microbiology and Immunology, University of Arkansas for Medical Sciences, Little Rock, AR 72205.

VESICULAR ADSORPTION SITES ON THE LATERAL EDGES OF *Simonsiella steedae*.

Fatimah A. Nahhas, Lawrence W. Hinck and W. Donald Newton, Department of Biological Sciences, Arkansas State University, State University, AR 72467.

ADENOSINE TRIPHOSPHATASE (ATPase) LOCALIZATIONS ALONG THE EXTRACELLULAR FIBRILLAR LAYER OF *Simonsiella steedae*.

Fatimah A. Nahhas, Lawrence H. Hinck and W. Donald Newton, Department of Biological Sciences, Arkansas State University, State University, AR 72467.

IDENTIFICATION OF A 60 KILODALTON IMMUNOREACTIVE RECOMBINANT *Brucella* PROTEIN AS A HEAT SHOCK PROTEIN HOMOLOG.

Michelle L. Price, R. Martin Roop II and Bruce Dunn, University of Arkansas for Medical Sciences, Little Rock, AR 72205 and Gerhardt G. Schurig, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA 24061.

SIMIAN VARICELLA VIRUS AND VARICELLA ZOSTER VIRUS SHARE SIMILAR DNA STRUCTURES AND COLINEAR GENOMES.

Carla Y. Pumphrey, Thomas M. Fletcher and Wayne L. Gray, Department of Microbiology and Immunology, University of Arkansas for Medical Sciences, Little Rock, AR 72205.

USING VIRUSES TO EXAMINE SOIL TREATMENT OF SEPTIC TANK EFFLUENT.

Mark Gross, Jenna Hestir, Department of Electronics and

Instrumentation, University of Arkansas at Little Rock, Little Rock, AR 72204; Duane C. Wolf and E. Moyer Rutledge, Department of Agronomy, University of Arkansas, Fayetteville, AR 72701.

ENHANCED GROWTH OF *Bordetella avium* IN THE TISSUE CULTURE MEDIUM RPMI 1640.

Eric D. Howard, Kenneth C. Powell and Timothy A. Kral, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701.

PRODUCTION AND ISOLATION OF A RECOMBINANT BACULOVIRUS CONTAINING THE GENE FOR THE HUMAN PROTEIN TYROSINE KINASE p56^{lck}.

Stuart Wright, Box 3711, Hendrix College, Conway, AR 72032 and James M. Trevillyan, Texas Tech University School of Medicine, 1400 Wallace Boulevard, Amarillo, TX 79106.

PHOTOREACTIVATION OF UV-INDUCED DAMAGE IN G1 PHASE XENOPUS CELLS THAT LEADS TO SISTER CHROMATID EXCHANGES AND CELL DEATH.

Dawn Laswell, Jennifer Barber and Gaston Griggs, Department of Biology, John Brown University, Siloam Springs, AR 72761.

PHYSICS/ENGINEERING I

Chairman: Dr. R.M. Hawk, University of Arkansas, Little Rock

DIFFUSION OF MUONIC DEUTERIUM IN D2 GAS.

Heather L. Woolverton, University of Central Arkansas, Conway, AR 72032.

K-SHELL IONIZATION MEASUREMENTS FOR LIGHT INCIDENT IONS.

Rahul Mehta, Department of Physics, University of Central Arkansas, Conway, AR 72032.

A NEW APPROACH TO THE SOLUTION OF THE ISING MODEL.

Michael George, Department of Computer Science, Mathematics and Physics, Arkansas State University, State University, AR 72467.

HOMOGENEOUS FUNCTIONS IN THERMODYNAMICS.

Stephen R. Addison, Department of Physics, University of Central Arkansas, Conway, AR 72032.

XRF AND FT-IR REFLECTANCE ANALYSIS OF GREASE ON STEEL.

Hudson B. Eldridge, Department of Physics, and Michael W. Rapp, Department of Chemistry, University of Central Arkansas, Conway, AR 72032.

ELECTRICAL BREAKDOWN OF GASES; HISTORICAL BACKGROUND AND SOLUTIONS.

Mostafa Hemmati, Department of Physics, Arkansas Tech University, Russellville, AR 72801.

EARTHRISE ON THE MOON.

Dean Hirschi, Department of Physics and Astronomy, University of Central Arkansas, Conway, AR 72032.

MICROWAVE SOIL STERILIZATION USED FOR PLANT SEEDLINGS.

Rudolph J. Eichenberger, Department of Physical Science and Technology, Southern Arkansas University, Magnolia, AR 71753.

ELECTROCHEMICAL DEGRADATION OF 2,2; DICHLORO DIPHENYL AT A RUTHENIUM DIOXIDE ELECTRODE.

G. Fuller, D. Miller, B. Miller, R. Hawk and R. Brower, Department of Electronics and Instrumentation, University of

Program

Arkansas at Little Rock, Little Rock, AR 72204.
PROPERTIES OF (RUTILE) RuO₂ COATINGS.
 Kamesh V. Gadepally, David N. Patangia* and Roger M. Hawy,
 Department of Electronics and Instrumentation, University of
 Arkansas at Little Rock, Little Rock, AR 72204 and *Senior,
 Central High School, Little Rock, AR 72004.

DOUBLE TUNED COSINE COIL FOR NMR IMAGING/SPECTROSCOPY.

Rao P. Gullapalli, Picker International Inc., 5500 Avion Park Drive,
 Highland Heights, OH 44143; Dikoma P. Shungu, Department of
 Radiology, John Hopkins School of Medicine, Baltimore, MD
 21205; and Roger M. Hawk, Department of Electronics and
 Instrumentation, University of Arkansas at Little Rock, Little Rock,
 AR 72204.

ANN: A SET OF EDUCATIONAL NEURAL NET SIMULATORS.
 Siripong Malasri, Christian Brothers University, Memphis, TN
 38104 and Stanley P. Franklin, Memphis State University,
 Memphis, TN 38152.

FISH BIOLOGY

Chairman: Dr. R. Kilambi, University of Arkansas, Fayetteville

**UNDERWATER OBSERVATIONS OF HABITAT USE PATTERNS
 IN BASS AND SUNFISH IN OZARK IMPOUNDMENTS.**

E.D. Dibble and C.A. Annett, Arkansas Cooperative Fish and
 Wildlife Research Units, Department of Biological Sciences,
 University of Arkansas, Fayetteville, AR 72701.

**BEHAVIOR AND MICROHABITAT USE PATTERNS OF BASS IN
 CHANNELIZED AND NATURAL RIVERS.**

C.A. Annett, Arkansas Cooperative Fish and Wildlife Research
 Unit, Department of Biological Sciences, University of Arkansas,
 Fayetteville, AR 72701.

**FIELD AND LABORATORY ANALYSIS OF THERMAL PREFER-
 ENDA OF LARGEMOUTH BASS FROM THERMALLY ENRICHED
 FLINT CREEK COOLING RESERVOIR.**

M.L. Galloway, Department of Science, Northwest Arkansas
 Community College, Rogers, AR 72756 and R.V. Kilambi,
 Department of Zoology, J. William Fulbright College of Arts and
 Sciences, University of Arkansas, Fayetteville, AR 72701.

**HYPERINFECTION OF SMALLMOUTH BASS (*Micropterus
 dolomieu*) BY THE TREMATODE *Clinostomum marginatum*
 ("YELLOW GRUB").**

James J. Daly, Bruce DeYoung and Terry L. Hostetler, Department
 of Microbiology and Immunology, University of Arkansas for
 Medical Sciences, Little Rock, AR 72205.

**EVALUATING METHODS OF ESTIMATING SMALLMOUTH BASS
 IN ARKANSAS GAME AND FISH COMMISSION NURSERY
 PONDS.**

James E. Johnson, Mitzi Pardew and Darrel Bowman, Arkansas
 Cooperative Fish and Wildlife Research Unit, Fayetteville, AR
 72701.

**BIOLOGY OF *Erimystax dissimilis* (PISCES : CYPRINIDAE) IN THE
 WHITE RIVER DRAINAGE, ARKANSAS.**

John L. Harris, Environmental Division, Arkansas Highway and
 Transportation Department, P.O. Box 2261, Little Rock, AR 72203.

**DISTRIBUTION AND HABITAT OF THE YELLOWCHEEK
 DARTER (*Etheostoma moorei*) IN THE SOUTH FORK OF THE
 LITTLE RED RIVER IN ARKANSAS.**

Lisa J. Hlass, 511 S. Denver, Russellville, AR 72801.
**ASPECTS OF THE REPRODUCTIVE LIFE HISTORY OF THE PALE-
 BACK DARTER, *Etheostoma pallidiorsum*.**

John L. Harris, Arkansas Highway and Transportation Department:
 Environmental Division, P.O. Box 2261, Little Rock, AR 72203;
 Henry W. Robinson, School of Science and Technology, Southern
 Arkansas University, Magnolia, AR 71753; and Betty G. Cochran,
 USForest Service, P.O. Box 369, Glenwood, AR.

Saturday, April 6, 1991

STUDENTS II:

VERTEBRATES/MICROBIOLOGY/BIOMEDICAL/ CHEMISTRY/ENGINEERING

Chairman: Dr. E.E. Dale, University of Arkansas, Fayetteville

***RED-COCKADED WOODPECKER HOME RANGE SIZES IN THE
 SHORTLEAF PINE FORESTS OF WESTCENTRAL ARKANSAS.**

Robert H. Doster, Department of Biological Sciences, University of
 Arkansas, Fayetteville, AR 72701

***USE OF RESTRICTED CAVITIES BY RED-COCKADED WOOD-
 PECKERS.**

Barbara Raulston, Arkansas Cooperative Fish and Wildlife
 Research Unit, Department of Biological Sciences, University of
 Arkansas, Fayetteville, AR 72701.

***GEOGRAPHIC VARIATION IN THE TYPE A AND B SONGS OF
 THE NORTHERN PARULA.**

Michael D. Bay, Department of Biological Sciences, University of
 Arkansas, Fayetteville, AR 72701 and Ralph R. Moldenhauer,
 Department of Biology, Sam Houston State University, Huntsville,
 TX 77341.

***PAST AND PRESENT DISTRIBUTIONS OF THE RED-COCKADED
 WOODPECKER *Picoides borealis* IN THE OUACHITA MOUNTAINS,
 ARKANSAS.**

Joseph C. Neal, Arkansas Cooperative Fish and Wildlife Research
 Unit, Department of Biological Sciences, University of Arkansas,
 Fayetteville, AR 72701 and Warren G. Montague, Ouachita
 National Forest, P.O. Box 100, Waldron, AR 72958.

****ISOLATION OF CA125 USING NEW MONOCLONAL ANTI-
 BODIES.**

Lisa A. Lowery, Gary A. Bannon, Hildur, H. Hardardottir, F.C.
 Miller, J. Gerald Quirk, Jr., and Timothy J. O'Brien, University of
 Arkansas for Medical Sciences, Departments of Obstetrics and
 Gynecology and Biochemistry and Molecular Biology, Little Rock,
 AR 72205 and Laurence M. Raymond, Arkansas Biotechnology
 Center, University of Arkansas Biomass Research Center,
 Fayetteville, AR 72701.

***COMPARATIVE QUANTITATIVE STRUCTURE-ACTIVITY
 ANALYSIS OF CYSTEINE PROTEINASES.**

R.I. Sanchez, R.L. Lopez de Compadre, C.M. Compadre,
 Department of Biopharmaceutical Sciences, University of Arkansas
 for Medical Sciences, Little Rock, AR 72205, and C.
 Bhuvaneshwaran, Department of Biochemistry, University of
 Arkansas for Medical Sciences, Little Rock, AR 72205.

****TRIPEPTIDE ANALOGS OF PEPSTATIN: SYNTHESIS & PEPSIN
 INHIBITION.**

Anissa Evans and Rose McConnell, Department of Chemistry,
 University of Arkansas at Pine Bluff, Pine Bluff, AR 71601.

INHIBITION DATA OF NEW LEUPEPTIN ANALOGS.

Amanda Camp and Rose McConnell, Department of Chemistry,

Arkansas Academy of Science

University of Arkansas at Pine Bluff, Pine Bluff, AR 71601.

*TERNARY CU(II)(3,5-DIPS)2-HUMAN SERUM ALBUMIN COMPLEXES.

Susan T. Shuff, Department of Medicinal Chemistry, College of Pharmacy, University of Arkansas for Medical Sciences, Little Rock, AR 72205, and John R.J. Sorenson, Department of Biology, Henderson State University, Arkadelphia, AR 71923.

*DETERMINATION OF CIMETIDINE IN PHARMACEUTICALS BY CAPILLARY ZONE ELECTROPHORESIS.

Susan Arrowood and A.M. Hoyt, Jr., University of Central Arkansas, Conway, AR 72032.

*IDENTIFICATION OF A GENE INVOLVED IN REGULATING THE STABILITY OF A *Tetrahymena thermophila* SURFACE PROTEIN mRNA.

P.J. McMillan, M.M. Tondravi, Department of Biochemistry and Molecular Biology, University of Arkansas for Medical Sciences, Little Rock, AR 72205; F.P. Doerder, Department of Biology, Washington University, St. Louis, MO 63130; G.A. Bannon, Department of Biology, Cleveland State University, Cleveland, OH 44115.

*PHASE ANGLE MEASUREMENT FOR THE EVALUATION OF CUTTING FLUID PERFORMANCE ON A-36 CARBON STEEL DURING COMMON LATHING OPERATIONS.

Gary L. Fuller, Department of Electronics and Instrumentation, University of Arkansas at Little Rock, Little Rock, AR 72204.

**REPRODUCTION IN THE SOUTHERN FLYING SQUIRREL (*Glaucomys volans*) IN THE OUACHITA MOUNTAINS OF CENTRAL ARKANSAS.

Paul T. Caster, Karen D. Stone, Gary A. Heidt and David Saugey, Department of Biology, University of Arkansas at Little Rock, AR 72204 and U.S. Forest Service, Jessieville, AR 71949.

**WINTER HOME RANGE OF FEMALE SOUTHERN FLYING SQUIRRELS (*Glaucomys volans*) IN THE OUACHITA MOUNTAINS OF CENTRAL ARKANSAS.

Karen D. Stone and Gary A. Heidt, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204.

**AGGRESSIVE BEHAVIOR BETWEEN THE TEXAS MOUSE (*Peromyscus atwateri*) AND THE COTTON MOUSE (*P. gossypinus*).

John A. Peppers, David W. Royal, Gary A. Heidt and Catherine Hall, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204.

BOTANY II/SCIENCE EDUCATION

Chairman: Dr. F.E. Lane, University of Arkansas, Fayetteville

PLANT REGENERATION FROM HERBICIDE RESISTANT RICE (*Oryza sativa*L.) CALLUS.

A.F. Mirolohi, F.H. Huang, L.F. Thompson, R.H. Dilday, and J.M. Al-Khayri, University of Arkansas, Fayetteville, AR 72701.

PHOTOSYNTHETIC EFFICIENCY OF DROUGHT-INDUCED LEAVES IN *Neviusia alabamensis*.

Jennifer Martsolf and Robert Wright, Department of Biology, University of Central Arkansas, Conway, AR 72032.

GROUNDWATER HYDROLOGY OF A POPULATION OF *Lindera melissifolia* IN ARKANSAS.

Dainette Priest and Robert Wright, Department of Biology, University of Central Arkansas, Conway, AR 72032.

PHOTOSYNTHESIS AND WATER RELATIONS OF A RARE

SHRUB, *Neviusia alabamensis*.

Robert D. Wright, University of Central Arkansas, Conway, AR 72032.

LEAF COLOR CHANGE IN *Acer saccharum* CORRELATES WITH EARLY OCTOBER TEMPERATURES.

J.L. Wickliff, University of Arkansas, Fayetteville, AR 72701.

ONE TEACHER'S APPROACH TO THE BATTLE AGAINST CHEMOPHOBIA.

Karen C. Weaver, Department of Chemistry, University of Central Arkansas, Conway, AR 72032.

A LABORATORY SKILLS TEST.

Richard S. Mitchell, Arkansas State University, Box 700, State University, AR 72467.

COMPUTERIZED EQUIPMENT AND NETWORKING IN BIOLOGY LABORATORIES: A REPORT ON AN NSF-ILI PROJECT AT UALR.

Alvan A. Karlin, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204.

CRITICAL THINKING WITH BOTANY: USE OF RAPID CYCLING *Brassica* (RCBr), WISCONSIN "FAST PLANTS".

James H. Peck, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204.

AQUATICS/INVERTEBRATES

Chairman: Dr. L. Ruser-Kraemer, University of Arkansas, Fayetteville

EVIDENCE OF SIGNIFICANT GENETIC VARIATION IN THE NON-TRANSFORMING SALAMANDER GENUS *Amphiuma*.

Alvan A. Karlin, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204 and D. Bruce Means, 1313 North Duval St., Tallahassee, FL 32303.

Aeromonas hydrophilia ASSOCIATED WITH DEATH IN AN ARKANSAS ALLIGATOR.

James J. Daly, Department of Microbiology and Immunology, University of Arkansas for Medical Sciences, Little Rock, AR 72205; Samuel Barkley, Arkansas Game and Fish Commission, Little Rock, AR; and Peggy Benton, St. Vincent's Infirmary Medical Center, Clinical Laboratory, Little Rock, AR.

THE IMPORTANCE OF REGIONAL COLLECTIONS IN BIOGEOGRAPHIC STUDIES: AN EXAMPLE FROM THE CADDISFLIES (INSECTA: TRICHOPTERA).

David E. Bowles, Captain, U.S. Army, Medical Corp, San Antonio, TX and Robert T. Allen, Department of Entomology, University of Arkansas, Fayetteville, AR 72701.

FIRST REPORT OF THE SUBGENUS *Podocampa* (INSECTA: DIPLURA: CAMPODEIDAE: *Campodea*) NORTH OF MEXICO: *Campodea* (*Podocampa*) *snowi*, A NEW SPECIES FROM ARKANSAS.

Robert T. Allen, Department of Entomology, University of Arkansas, Fayetteville, AR 72701.

SPIDERS COLLECTED IN SOUTHEAST ARKANSAS BY THE PIT TRAP METHOD.

Peggy Rae Dorris, Henderson State University, Arkadelphia, AR 71923.

THE HABITAT VALUE OF AQUATIC PLANTS: EFFECTS OF *Potamogeton nodosus* ON INVERTEBRATES IN THE SALINE RIVER, BRADLEY COUNTY, ARKANSAS.

Edmond J. Bacon, Department of Natural Sciences, University of Arkansas, Monticello, AR 71655 and Andrew C. Miller, US Army

Program

Engineer Waterway Experiment Station, Vicksburg, MS 39180.
AN ANNOTATED LIST OF THE LEPIDOPTERA KNOWN FROM
MAGAZINE MOUNTAIN, ARKANSAS.

Richard Brown, Mississippi State University, Starkville, MS and
Robert T. Allen, Department of Entomology, University of
Arkansas, Fayetteville, AR 72701.

BEHAVIORAL DEACTIVATION OF PLANT DEFENSES BY
INSECT HERBIVORES.

David E. Dussourd, Department of Biology, University of Central
Arkansas, Conway, AR 72032.

BIOCHROME TESTING TO DETERMINE EUTROPHICATION
LEVELS OR STAGES.

Samuel J. Gates and John D. Rickett, Department of Biology,
University of Arkansas at Little Rock, Little Rock, AR 72204.

RELATIONSHIP OF TEST HOLE DEPTH AND SOIL PROPERTIES
ON PERCOLATION RATES FOR TWO SOILS IN ARKANSAS.

Paul B. Francis, University of Arkansas at Monticello, Monticello,
AR 71655.

CHEMISTRY/ENGINEERING II

Chairman: Dr. D.J. Davis, University of Arkansas, Fayetteville

PREPARATION OF A SERIES OF SUBSTITUTED N-PHENYL 5-
BROMO-2-CHLORO AND 5-BROMO-6-CHLORONICOTINATES OF
POTENTIAL AGRICULTURAL INTEREST.

Frank L. Setliff, Maximillia M. Muguluma and Jody Z. Caldwell,
Department of Chemistry, University of Arkansas at Little Rock,
Little Rock, AR 72204.

AN X-RAY FLOURESCENCE LAB FOR ADVANCED ANALYTICAL
STUDENTS.

Michael W. Rapp and William S. Taylor, Department of Chemistry,
University of Central Arkansas, Conway, AR 72032.

PROPYLENE GLYCOL ALTERS ACETAMINOPHEN TOXICITY IN
MICE.

T.A. McRae, J.E. Snawder, A.R. Warbritton and D.W. Roberts,
National Center for Toxicological Research, Jefferson, AR 72079.

STRUCTURE-ACTIVITY RELATIONSHIPS OF PHOTOTOXIC
THIOPHENES.

R.L. Compadre and C.M. Compadre, College of Pharmacy,
University of Arkansas for Medical Sciences, Little Rock, AR
72202; R.J. Marles and J.T. Amason, University of Ottawa, Ottawa,
Ontario, Canada K1N6N5.

THE ELECTROCHEMICAL CHARACTERIZATION OF M1.

Latriana Hairston, Kimberly Harris, Ricky Bean and B.T. Duhart,
Department of Chemistry, University of Arkansas at Pine Bluff,
Pine Bluff, AR 71601.

DETERMINATION OF STREPTOMYCIN IN INJECTABLE PREPA-
RATIONS BY GAS-LIQUID CHROMATOGRAPHY.

A.M. Hoyt, Jr., Susan Arrowood, Joachin Jessup and Mark Woods,
University of Central Arkansas, Conway, AR 72032.

CONFORMATIONAL HETEROGENEITY IN A LINEAR PENTAPEP-
TIDE.

S. Ramaprasad, Departments of Radiology and Pathology, Univer-
sity of Arkansas for Medical Sciences, Little Rock, AR 72205.

INSTRUMENTATION FOR A POSTURAL SWAY PLATFORM.

Robert B. Shanks and Paul McLeod, Department of Electronics and
Instrumentation, University of Arkansas at Little Rock, Little Rock,
AR 72204.

A SIMPLE SYNCHRONOUS DETECTOR FOR SPECTROSCOPY
STUDIES.

Mokhtar Mofidi and M. Keith Hudson, Department of Electronics
and Instrumentation, University of Arkansas at Little Rock, Little
Rock, AR 72204.

INVESTIGATION OF INFRARED EMISSIONS FROM FLAMES
AND ROCKET PLUMES USING A RADIOMETER.

Kathy Underhill, M. Keith Hudson, Jason Willis, Department of
Electronics and Instrumentation, University of Arkansas at Little
Rock, Little Rock, AR 72204 and Matt Russo, Hercules Aerospace,
1101 Johnson Avenue, McGregor, TX 76657.

CHROMATOGRAPHIC DATA ACQUISITION AND PEAK DETEC-
TION SOFTWARE.

William G. Hood and M. Keith Hudson, Department of Electronics
and Instrumentation, University of Arkansas at Little Rock, Little
Rock, AR 72204.

EVALUATION OF PARTICULATE AIR FILTERS FOR INDOOR AIR
CLEANING.

M.R. Clark, K.B. Tennal, T.W. Rimmer and M.K. Mazumder,
Department of Electronics and Instrumentation, University of
Arkansas at Little Rock, Little Rock, AR 72204.

PREPARATION OF A SERIES OF N-PHENYLAMIDES OF 5-
BROMO-6-CHLORONICOTINIC ACID AND 5-BROMO-2-
CHLORONICOTINIC ACID.

Jody Z. Caldwell and Frank L. Setliff, Department of Chemistry,
University of Arkansas at Little Rock, Little Rock, AR 72204.

VERTEBRATES/GEOLOGY

Chairman: Dr. T. Martin, University of Arkansas, Fayetteville

LANDOWNER REPORTS OF DEER HUNTER DAMAGE IN
ARKANSAS.

Richard A. Kluender and T. Bently Wigley, Jr., Forest Resources
Department, University of Arkansas at Monticello, Monticello, AR
71655.

DISTRIBUTION, SCUTELLATION, AND REPRODUCTION IN THE
QUEEN SNAKE, *Regina septemvittata* (SERPENTES: COLUBRIDAE),
FROM ARKANSAS.

Stanley E. Trauth, Department of Biological Sciences, Arkansas
State University, State University, AR 72467.

POSTERIOR MAXILLARY FANGS OF THE FLATHEAD SNAKE,
Tantilla gracilis (SERPENTES: COLUBRIDAE), USING SCANNING
ELECTRON MICROSCOPY.

Stanley E. Trauth, Department of Biological Sciences, Arkansas
State University, State University, AR 72467.

HABITAT UTILIZATION AND DISTRIBUTION OF THE FOUR-
TOED SALAMANDER, *Hemidactylum scutatum*, IN THE OUACHITA
MOUNTAINS.

David A. Saugey, United States Forest Service, Jessieville, AR
71949 and Stanley E. Trauth, Department of Biology, Arkansas
State University, State University, AR 72467.

RANGE EXTENSION OF THE ENDANGERED GRAY BAT, *Myotis*
grisescens, INTO THE ARKANSAS RIVER VALLEY.

Thomas A. Nelson, David A. Saugey, and Lee E. Carolan, Fish and
Wildlife Biology Program, Arkansas Tech University, Russellville,
AR 72801 and United States Forest Service, Jessieville, AR 71949.

IDENTIFYING *Colibri* HUMMINGBIRDS IN ARKANSAS USING
INDIRECT MEASUREMENTS.

Douglas A. James, Department of Biological Sciences, University
of Arkansas, Fayetteville, AR 72701.

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ORGANOCHLORINE PESTICIDE CONCENTRATIONS IN VARIOUS SPECIES OF SOUTHBOUND MIGRATORY PASSERINES IN NORTHEASTERN LOUISIANA.

Ragupathy Kannan, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701 and David T. Kee, Department of Biology, Northeast Louisiana University, Monroe, LA 71209.

REPRODUCTIVE BIOLOGY OF FEMALE WHITE-TAILED DEER ON HOLLA BEND REFUGE.

Thomas A. Nelson, Arkansas Tech University, Russellville, AR 72801.

HYBRIDIZATION AND SYSTEMATICS IN MONOGAMOUS VERTEBRATES: THE GENUS *Canis* IN ARKANSAS.

Raymond Pierotti, Alicia Shirakbari and David Pennock, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701.

OBSERVATIONS ON THE NATURAL HISTORY OF THE MEDITERRANEAN GECKO *Hemidactylus turcicus* (SAURIA: GEKKONIDAE) IN NORTHWESTERN ARKANSAS.

Mark A. Paulissen, Department of Biology, Slippery Rock University, Slippery Rock, PA 16507 and Thomas M. Buchanan, Division of Science, Math and Engineering, Westark Community College, Ft. Smith, AR 72913.

REPORTED ANIMAL RABIES IN ARKANSAS: 1981-1990. A TEN YEAR UPDATE.

Laura R. Chandler, Karen D. Stone, Gary A. Heidt, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204 and David A. Saugey, U.S. Forest Service, Jessieville, AR 71949.

PLEISTOCENE MAMMALS FROM THE SOUTH SULPHUR RIVER, HUNT COUNTY, TEXAS.

Leo Carson Davis, Department of Physical Sciences, Southern Arkansas University, Magnolia, AR 71753 and Kenneth M. Ball, Barton Junior High School, 400 West Faulkner, El Dorado, AR 71730.

EFFECTIVENESS OF VARPEL ROPE(TM) ON WILD RAT (*Rattus norvegicus*) AND MICE (*Mus musculus*) IN LABORATORY AND FIELD CONDITIONS.

J.D. Wilhide, M.D. Fletcher and V.R. McDaniel, Department of Biological Sciences, Arkansas State University, State University, AR 72467.

OBSERVATIONS ON A RESIDENT POPULATION OF *Myotis lucifugus*, IN JACKSON COUNTY, ARKANSAS.

M.D. Fletcher and J.D. Wilhide, Department of Biological Sciences, Arkansas State University, State University, AR 72467.