

INSTRUCTIONS FOR CONTRIBUTORS

Eligibility

Indiana Academy of Science members in good standing are eligible to submit papers for publication in the *Proceedings*. When a paper is signed by more than one author, at least one must be a member of the Academy. Preferably, eligibility should be established before submitting the paper, as such papers are given priority. In any case, all authors must be certified by the treasurer for payment of dues and old reprint bills at the time of the deadline (see below). Invited papers may be considered for publication regardless of the membership status of the author. If authors are unable to attend the fall meetings, papers read by title by Sectional Chairman may also be considered for publication.

All papers submitted for publication in full will be reviewed by qualified reviewers selected by the Publication Committee. The acceptance of papers for the *Proceedings* is the responsibility of the Publications Committee. Among papers of primarily regional interest, *e.g.* certain aspects of botany, zoology, geology, geography, and anthropology, those dealing with Indiana material will be accorded preference.

Abstracts

Three copies of an abstract should be submitted to the Sectional Chairman at the time the title of a paper is submitted for the fall program. All abstracts are acceptable for publication in the *Proceedings*, either separately or with papers that are published in full. Two copies of the abstract should be marked "for the editor." The third copy of the abstract should be marked "for the sectional chairman," and may include information about time, projection facilities needed, etc. The abstract should be prepared according to the form currently used in the *Proceedings* (see the latest copy of the *Proceedings*). The abstract should be complete, clear in itself and not over 5% of the length of the paper. Normally, abstracts should not exceed 200 words in length. Abstracts and notes are not reprinted (except for those which are included at the head of a paper published in full).

Deadline at the Editorial Office

When sent via the Sectional Chairman as prescribed, or directly, all materials to be considered for publication in the *Proceedings* must reach the editor within 20 days following the Fall Meeting. This deadline is necessary to insure that the publication process remains on schedule.

Preparation of Manuscripts

- A. Refer to the latest copy of the *Proceedings* for the accepted style of abstracts and papers, and follow this, especially in literature citations, headings, footnotes, tables and figure construction.
- B. Type on 11 x 8½-inch bond paper with a new ribbon, leaving some margin. Double space everything, including title, author's name, department and institution, footnotes, and quotations, legends and literature list. Manuscripts must be submitted in duplicate. The original will become the printer's copy; if it must be retyped, it will be sent back to the author for this.
- C. Footnotes are to be kept to a minimum. Necessary footnotes are numbered consecutively throughout, and referred to in the text as superscripts, without parentheses.
- D. Literature citations are listed alphabetically at the end of the paper, headed Literature Cited. List complete literature citations, *i.e.*, author, date, title, journal, (or

publisher, and city), volume and total pages. The highly abbreviated form used in some journals has not been adopted for the *Proceedings*. Follow these models:

7. Doe, J.B., and R.C. Roe, 1949. New light from old radioactive carbon. *J. Amer. Biol. Soc.* 34:278-305.
 8. Milazzo, G. 1963. *Electrochemistry*. Elsevier Publ. Co., New York, N.Y. 708 p. References cited should be numbered consecutively (in the alphabetized list) and should be referred to in the text by number in parenthesis on the line of type and before the period if at the end of a sentence.
- E. Do not underline anything except scientific names, words to be italicized, and titles of books when they appear in the text only, not in the literature list.
 - F. All literature listed, tables and illustrations, must be referred to in the text.
 - G. Tables, which are costly to print, should be reduced to a minimum. Avoid small tables, scattered through the text. Each table (including heading) shall be typed on a separate letter-size sheet and placed at the end of the paper. Outsize tables cannot be accepted.
 - H. Photographs should be printed on glossy paper and have good contrast. It is best to mount them trimmed to fit tightly together at the edges in groups, on stiff cardboard with rubber cement. Proportion the group for a full page of the *Proceedings*, or use the full width of the paper (4 1/8") and any part of the page's height. Do not mix line drawings and photographs in the same group. All figure captions should be on a single letter-size sheet, numbered to correspond and placed at the end of the paper.
 - I. The original for line drawings need be no more than twice the size desired for the printed figure. They should be proportioned and arranged to fit the page size of the *Proceedings*. All line drawings must be drawn in India ink, lettered with a lettering set, and of suitable size to allow for necessary reduction. Do not submit printed maps when the necessary reduction will efface the narrower lines or render some of the lettering hardly legible: such maps should be redrawn and lettered in adequate size letters, omitting unnecessary detail. All illustrations requiring a size scale must portray the scale in a manner that permits size reduction. Illustrations must be kept to a minimum.
 - J. Major professors are urged to review all papers by their graduate students, for both form and content, before they are sent in for publication. On those based on university theses, manuscripts carrying the approval by the professor will be given preference over those without such approval. New authors, especially, are reminded that a scientific paper should summarize the work, not recapitulate it. It must be much more concise than a university thesis, avoiding all extraneous material especially long tables and lists of little interest except to the author. All manuscripts should be written concisely as possible.
 - K. Reprints of papers are paid for by the authors, at cost. Directions for ordering reprints accompany the galley proof and the orders are placed at the time the author returns the corrected galley proof to the editor. The order forms supplied with the galley proof must be completed and returned to the editor along with any special institutional forms regarding payment for the reprints. Abstracts and notes are not reprinted.
 - L. The editor needs at the time he mails out the galley, current addresses for all the authors and co-authors of all abstracts and papers. Many former graduate students lose the opportunity to order reprints when their forwarding addresses

are faulty. It is suggested that the student's permanent home address be written on the reverse side of the abstract copy marked "for the editor."

Revised July 31, 1974.

INDEX

- Abscisic Acid—Kinetin Interactions on Lipid Bilayers*, 81
ADAMS, FRANCIS T., 391
ADDISON, B.G., 138
Additions to the Flora of Spencer County, Indiana, 339
Additions to the Flora of Sullivan County, Indiana, 343
Addresses and Contributed Papers, 59
AGEE, ERNEST M., 419
AHLRICHS, J.L., 405
Air Temperature Fluctuation in Indonesia During the Eclipse of 11 June 1983*, 391
ALBRIGHT, JACK L., 457
ALDRICH, JAMES R., 290
ALLAMONG, BETTY D., 289
ALVAGER, TORSTEN, 125
Do Amphibians Feed or Exploit Ponds?*, 151
An Analysis of Dispersal in *Peromyscus leucopus**, 149
Analysis of Three Tool Kits from the Bluegrass Site (W162), a Late Archaic French Lick Phase Site in Warrick County*, 77
Angiosperm Root Parasites of Indiana, 87
Annual Financial Report, 41
Annual Report, Indiana Junior Academy of Science, 46
ANSLINGER, C. MICHAEL, 77
Anthropology, 77
The Application of Chromosome Analysis for Breeding Management of Squirrel Monkeys*, 458
Archaeoastronomy and Ohio Hopewell*, 239
Archaeological Resources and Riverbank Erosion in Western Indiana*, 78
ARNOLD, PAUL T., 153, 167
Sir Arthur Conan Doyle Indicted*, 261
ASPRAY, LORI ANN, 149
AVERBECK, JANET KELLY, 211
BACKS, STEVE E., 161
BACONE, JOHN A., 303
BADGER, KEMUEL, 309
BARBATI, CHERYL, 266
BARR, R., 97
BEHFOROUZ, MOHAMMAD, 137, 144
BENNETT, ALICE S., 59
BEYNON, DIANE E., 77, 458
BERRY, JAMES W., 149
BHATTACHARYA, PRADEEP K., 81, 121
BIESBOER, DAVID D., 84
The Big Walnut Great Blue Herons*, 461
A Biosystematic Study of Selected Members of the Genus *Crataegus* Employing Electrophoretic Techniques*, 289
BLAIR, B. O., 361
BLODGETT, THOMAS D., 199
BLOOM, WILLIAM W., 81
BOLAN, JOSEPH L., 137
BONDI, J., 140
Bone and Antler Industry at a Late Archaic, French Lick Phase Site (W162) in Warrick County*, 78
BONHOMME, HAROLD L., 181
BOOHER, N.J., 277
BOROMISA, ROBERT D., 213
Botany, 81
BRACK, VIRGIL, JR, 463
BROOKS, AUSTIN, 82
BROOKS, LUCY, 385
BROWN, CYNTHIA, 209
BROWN, RANDALL E., 153, 167
BUGAYONG, RAYDO, 207
BURDEN, STANLEY L., 137
CAHALAN, CAROL E., 458
CAMPAIGNE, E., 67
CANTIN, MARK, 77
CAPSHEW, JAMES H., 239
CARPENTER, MARY ELLEN, 78
CARPENTER, STEPHEN R., 150
CASEBERE, LEE A., 303
CASTRALE, JOHN S., 173
Cell Biology, 121
Cellar Storage Shows Promise for Preserving Viability of Black Walnut Seed*, 84
CHANG, WHEI-MAY LEE, 233
Changes in Nucleic Acid and Protein Content in Nuclei of Human Cervical Cells*, 121
Changes in Population Characteristics of Yellow Perch in Indiana Waters of

- Lake Michigan, 1976-1981, Including Proportional Stock Density*, 150
Chemistry, 137
CHESAK, DAVID D., 207
CHIANG, P.C., 231
CHOWATTUKUNNEL, JOSEPH T., 209
A Classroom—applicable Methodology for Evaluation of Maturation in Cognitive Structure, 352
Cold Air Outbreaks over Lake Michigan During the 1982-1983 Winter Season, 419
Comments on the Occurrence of Blanding's Turtle, *Emydoidea blandingi*, in LaPorte and Saint Joseph Counties, Indiana*, 460
COLE, THOMAS A., 123
Collections of Planktonic and Interstitial Marine Rotifers from Puerto Rico, 475
A Comparative Study of Photosynthetic Rates in Deep (30m) and Shallow (1-2m) Water Species of Algae*, 82
Comparison of Climatologies for Existing Heterogeneous Temperature Records with Those for Adjusted Records for West Lafayette and Whitestown, Indiana, 395
Comparison of Exchange Rate of Quaternary Ammonium Ions on Various Cation Exchangers*, 231
A Compilation of Plant Diseases and Disorders in Indiana—1983, 103
Composition Gradients in Forest Canopy and Groundlayer Vegetation within a White River Floodplain Forest, 313
A Comprehensive One-year Chemical Study of Acid Precipitation across Central Indiana*, 139
Computer-based Floristic Maps of the United States*, 151
Concentration and pH Dependent Stability of Sodium Thiosulfate Solutions*, 138
Control of S-Adenosylmethionine Synthetase in *Mucor racemosus**, 265
COOK, CHARLES K., 261
COOK, CURTIS R., 83
CORY, WALTER A., JR., 351
COUTINHO, J., 405
CRABBÉ, PIERRE, 141
CRANE, F.L., 97, 267
CROVELLO, THEODORE J., 151
Crust Strengths of Two Indiana Soils as Influenced by Soil Properties and Tillage, 441
Crystal and Molecular Structure of Octachlorostyrene, C₈Cl₈, a Great Lakes Pollutant, 145
CUDMORE, WYNN W., 469
CUMMINGS, BRUCE R., 209
Current Status of the Blue Wasp, *Chalybion zimmermanni* Dahlbom, 229
Cytofluorometric Measurements and Nuclear and Nucleolar Morphological Changes in Successive Epidermal Cells in Response to *Botrytis allii* Infection*, 81
CZERWINSKA, JOLANTA M., 275
DAILY, FAY KENOYER, 47
DALE, ROBERT F., 395
DEMAREE, HERALD A., 209
DENEFF, T., 265
Deodorizing (Descending) in the Male Common American Goat (*Capra hircus*)*, 457
Descriptive Study of the Response Pattern to Urinary Conspecific Odors by Female Golden Hamsters in a Home Cage Environment*, 461
The Design of a High Pressure Liquid Chromatography-based System for the Quantitative Determination of Denaturant-stable Protease Cleavage Specificities*, 138
Detection and Preference of Conspecific Odor Cues among Female Hamster Conspecifics*, 458
Detection of Trace Substances by Gas Chromatography-Mass Spectrometry* 143
Determination of Aluminum Toxicity in Indiana Soils by Petri Dish Bioassay, 405
Determination of Error for the Purdue Regional Objective Analysis of the Mesoscale (PROAM), 435
The Development of Computer Software for Use in the High School Chemistry and Physics Classrooms*, 276
Developmental Temperature and Emydine Turtle Systematics*, 457
DHAWALE, SHRIKRISHNA W., 138
DIAS, JERRY R., 141

- Digital Coding of Infrared Spectra and Computer File Searching with the TI-99/4A*, 144
- Digitized Soil Map of Fairfield Township, Tippecanoe County, Indiana*, 392
- The Distribution of the Smoky Shrew, *Sorex fumeus*, and the Pygmy Shrew *Microsorex hoyi*, in Indiana with Notes on the Distribution of Other Shrews, 469
- DUFF, D.W., 457
- DUNN, H.E., 138
- EBERLY, K., 265
- EBINGER, JOHN, 187
- Ecology, 149
- Effect of Flooding on Small Mammal Populations at Salamonie Lake, 167
- The Effect of Prey Diet on Predation Efficiency of the Coccinellid, *Cryptolaemus montrouzieri* (Mulsant), 211
- The Effect of Single and Divided Dose Administration on the Efficacy of Oxfendazole against *Trichinella spiralis**, 460
- Effects of Anthracycline Compounds on Transmembrane Redox Function of Cultured HeLa Cells, 267
- Effects of Flooding on Vegetation at Salamonie Reservoir, 153
- Effects of Harvest on Dry Matter and Crude Protein Yields of *Medicago sativa* L., 195
- The Effects of Hormone Treatment on Superoxide Dismutase Activity in Etiolated Decapitated Pea Seedlings*, 83
- Effects of Selected Antifungal Agents on Hyphal Tip Growth*, 122
- The Effects of Sevin SLR^R on Nurse and Field Honey Bees*, 209
- Effects of Submersed Plants on Sediment Redox and Solute Levels*, 150
- Efficacy of Neem Extract Against Insects of Eggplant*, 210
- The Egg Laying Process in the Micronesian Orb-weaving Spider, *Cyrtophora moluccensis* (Araneae: Araneidae)*, 149
- ELLIOTT, MARCIA, 78
- Engineering, 207
- Engineering Geological Evaluation of an Earth Rock Fill Dam, Greene Sullivan State Forest, Indiana*, 237
- Entomology, 209
- Environmental Effects on Ammonia Volatilization from Surface-applied Urea to *Dactylis glomerata* L.*, 392
- Environmental Quality, 231
- EPPERSON, DAVID L., 395
- Evaluation of Fluorescent Membrane Probes as Potential Detectors of Resolved Amniotic Fluid Phospholipids*, 141
- Evaluation of Muskmelon and Watermelon Cultivars for Damage Attributed to a Combination of Ozone and Sulphur Dioxide*, 232
- Evidence for Increased Primary Productivity under Dynamic Conditions*, 82
- EWERT, MICHAEL A., 457
- Exploratory Experiments in Thermometric Titrimetry Using Hypohalites as Oxidimetric Reagents*, 139
- FARLOW, JAMES O., 458
- FARRINGER, L. DWIGHT, 275
- FERSTEL, MARY BETH, 458
- FEUQUAY, JAY, 125
- Final Report on the Excavations at Fox Island Site (12AL121) Allen County, Indiana*, 77
- FISCHER, ROBERT B., 458, 459, 461
- A Floristic Survey of Acid Seep Springs in Martin and Dubois Counties, Indiana, 323
- FLYNT, MICHAEL, 217
- FOGLE, THOMAS A., 355, 458
- FOWLER, S.E., 361
- Fragmentation and Isomerization of Trimethylene Sulfites*, 143
- FRANCE, RICHARD G., 351
- French Lick Phase Burials and Mortuary Customs of the Bluegrass Site (W162), Warrick County, Indiana*, 78
- FRIEDLE, ROBERT E., 459
- GARCIA, A., 460
- GARCIA, J.R., 265
- General Science Education in Indiana, 354
- Genetic Differentiation among Populations of *Collinsia verna**, 121
- Genetic Variation in *Yucca glauca**, 149

- Geologic Conditions Related to Longwall Coal Mining, Pike and Warrick Counties, Indiana*, 237
- Geology and Geography, 237
- Glades of the Knobstone Escarpment in Indiana, 303
- GODISH, THAD, 231
- GOEBEL, EDWIN M., 265
- GOECKER, A.D., 361
- GOMMEL, VIVIAN P., 391
- GOMMEL, WILLIAM R., 391
- GORDON, JEFFREY A., 138
- GRAY, BONNIE, 458
- GREENLEE, JUDITH K., 121
- GRIMSTAD, PAUL R., 213
- GROSS, WILLIAM, 139
- GROVE, STANLEY N., 122, 123
- GUTTMAN, DEBORAH L., 139
- HADDOCK, JAMES D., 211
- HADLEY, F.J., 140
- HAMRICK, LINDA, 352
- HART, M.J., 459
- HEISER, CHARLES B., JR., 241
- HENRY, MARK, 149
- HESTER, PAUL, 81
- Hibernacula of the Endangered Indiana Bat in Indiana, 463
- The High School Chemistry Laboratory Can Strengthen Abstract Reasoning Skills, 385
- HILST, A.R., 361
- HIPPENSTEEL, PETER A., 209, 231
- Histological Investigation of Tannic Acid Detoxication of Hepatic and Renal Tissue of *Tamascrius hudsonicus**, 459
- The Historic and Present Distribution of Ruffed Grouse in Indiana, 161
- The History and Development of Thermometric Titrimetry, 257
- History of Science, 239
- HITES, RONALD A., 145
- HIVELY, RAY H., 239
- HOGARTH, A.J.C.L., 139, 257
- HOLLETT, BYRON P., JR., 313
- HOMOYA, MICHAEL A., 290, 323
- HOSTETLER, CHERYL K., 140
- How Teachers of Various Backgrounds Solve the Problem of Sequencing four Masses with a Pan Balance, 354
- HOWARD, K.L., 353
- HOWE, DAVID J., 207
- HOWE, ROBERT H.L., 207, 231, 232, 233
- HOWES, RUTH H., 277, 283
- HUANG, C.T., 237
- HUFFMAN, JOHN C., 145
- HULTS, MALCOM E., 275
- HUTCHINSON, MAX D., 303
- HUNT, S.K., 392
- Hydrolysis of the Adenine Nucleotides, AMP and ADP, and Selected Purine and Phosphate Modified Analogs*, 142
- Immunocytochemical Identification of Laticifers*, 84
- Index, 513
- Indiana Karst*, 391
- Indiana Plant Distribution Records, 349
- Indiana Plant Distribution Records XXIII, 333
- Induced Soil Compaction Alters Soil Physical Properties and Seedling Root Growth*, 393
- Informal Conference, 261
- Insects and Other Arthropods of Economic Importance in Indiana in 1983, 225
- Instructions for Contributors, 509
- Interspecific Relationships among Three Species of Milkweed Beetles (*Tetraopes: Cerambycidae*), 219
- IQBAL, ZAFAR, 122
- Isomerization of the 5- and 14-Positions of Δ^7 -6 α Steroids*, 141
- Issues in the History of Sciences, 261
- JAAFAR, IBRAHIM H., 151
- JACKSON, MARION T., 309, 313
- JACKSON, MISTY, 78
- Jamestown Canyon Virus: Vector-host Studies in Northern Indiana, 213
- JARRETT, HARRY W., III, 152
- JAYNES, MARY L., 150
- JENSEN, RICHARD J., 289
- JOHNSON, ERIC R., 138, 140
- JOHNSON, LEWIS, 333
- JOHNSON, SUSAN M., 352
- JOHNSON, WILLIS H., 123
- KALSOW, CAROLYN M., 266
- KAMINSKY, RAY, 145
- KAPADNIX, CHANDRASHEKHAR, 459
- KARR, M.C., 405

- KIMBLE, EDWARD A., 122
 A Kinetic Study of the Reaction of W(CO)₆ (phosphine) (pyridine) Complexes with Phosphines*, 140
- KING, JEFFREY, 82
- KOWALSKI, MICHAEL P., 219
- KRAMER, ROSALIE, 82
- KRIEG, NOEL R., 265
- KRITSKY, GENE, 209, 261, 262
- KRISTOF, S.J., 392
- KROHNE, DAVID T., 149
- Laboratory Interfacing of the VIC-20 Computer through an A/D Converter*, 275
- Laboratory Interfacing of the VIC-20 Computer through its Game-control Port*, 275
- Laboratory Testing of Indiana Shales*, 237
- Lake Residential Sewage Disposal Effects on Ground Water Quality*, 231
- LAMKIN, REBECCA M., 140
- Land Use Changes and an Estimate of Prime Farmland Loss to Development in Hamilton County, Indiana 1940-1980, 449
- LANG, PATRICIA L., 140
- LATIN, RICHARD X., 103
- LAUER, THOMAS E., 181
- LEOPOLD, DONALD J., 87
- LIGHTNER, J.W., 392
- Limnological Assessment and Feasibility Study of Lakes of the Four Seasons*, 152
- LITTON, JAMES R., JR., 363, 459, 475, 479
- Local Antibody in Experimental Uveitis*, 266
- Long-term Culture of Epithelial Cells Derived from Axolotl (*Abystoma mexicanum*) Embryos, 131
- LOVELL, C.W., 237
- MCCAFFERY, M., 97
- MCCAIN, J.W., 335
- MCCLAIN, WILLIAM E., 339, 343
- MCCOMISH, THOMAS S., 150
- MCCRACKEN, R.O., 460
- MCCUNE, JOHN, 141
- MCDOWELL, BRIAN, 187
- McMILLEN, JACK D., 151
- McNITT, TIMOTHY J., 458
- Male Mating Strategies in Three Hylid Frogs*, 460
- MANALIS, R.S., 353
- MASON, CHERYL L., 375
- Mass Spectral Fragmentation of Novel Steroidal Ketones and Ketals*, 141
- The Mating Behavior of the Tree Frog *Hyla versicolor**, 460
- MAXON, N.P., 195
- MAXWELL, RICHARD, 349
- Measurements of Cytosolic Calcium and Sodium During Acetylcholine Stimulation of Parotid Salivary Glands*, 124
- MECKLENBURG, GEORGE A., 122
- MENGEL, D.B., 392, 441
- MEUNIER, GARY F., 458, 459
- MEYER, ROBERT W., 225
- MEYERS, C.Y., 138
- MEYERS, T.P., 392
- Microbiology and Molecular Biology, 265
- A Microcomputer Based System for Making Time Course Measurements of Dissolved Oxygen*, 152
- Micromanipulation of Exocytotic Aggregates from *Paramecium multimicro-nucleatum**, 123
- MIDDLETON, ARTHUR, 276
- MILLER, KEVIN W., 122
- Minutes of the Academy Council, 29
- Minutes of the Budget Committee Meeting, 39
- Minutes of the Fall Meeting (Executive Committee), 30
- Minutes of the Fall Meeting (General Session), 36
- Minutes of the Spring Meeting (Executive Committee), 22
- Mitochondrial Membrane Potential in Cytochalasin Treated Hyphal Tips of *Rhizoctonia solani**, 123
- A Model for The Interactions of a Tripartite Association*, 151
- Modeling Teaching Strategies for Biology Laboratory Experiences, 355
- Modification of the Classical Preparative Method of Carbonyl 2, 4-Dinitrophenylhydrazones*, 137
- MODRAK, GINA M., 141, 142
- MORRIS, MOLLY, 460
- MORSE, MARY ANN, 289
- MOSBO, JOHN A., 140

- MOSS, J., 460
 MOULD, E.D., 265, 355, 459
 MULINIX, C., 97
- NASSIM, BAHMAN, 141
 Natural Barrens and Post Oak Flatwoods
 in Posey and Spencer Counties, 290
 Necrology, 47
 On the Need for Engineers Trained in
 Biotechnology*, 207
 NEFF, ANTON W., 131
 NEIE, VAN E., 353
 NELSON, CRAIG E., 151, 457
 NELSON, D.W., 413
 The New IAS Fellowship Program for
 Secondary School Science Teachers,
 351
 New Members for 1983, 55
 New Vascular Plant Distribution Records
 for Tippecanoe County, Indiana, 335
 A New Zoo in Indianapolis, 351
 NEWMAN, JIM, 187
 NIERSTE, D.M., 460
 Nitrification of Ammonium Applied to
 Soils in Fall, Winter and Early Spring,
 413
 NOLLER, C.H., 195
 NORMAN, JON, 349
 NYGREN, STEVEN E., 137
- OBER, DAVID R., 276
 The Occurrence of the Freshwater Medusa
Craspedacusta sowerbyi Lankester in
 Spicer Lake, Saint Joseph County,
 Indiana, 479
 ODE, PAUL, 229
 Officers and Committees for 1983, 3
 OKONKWO, IGNATIUS O., 237
 OLSEN, JULIE A., 83
 OLSEN, ROBERT J., 143
 On-line Data Acquisition and Reduction
 System for Lineweaver-Burk Enzyme
 Kinetics Studies Using a U.V.-Visible
 Spectrophotometer and an Apple II
 Plus Microcomputer*, 137
 Ontogenesis of a Calcium-binding Pro-
 tein Specific to Brain*, 122
 O'SHAUGHNESSY, A.W., 353
 Osmotic Studies on the Holostean
*Lepiosteus platostomus**, 457
 OSSOM, E.M., 195
- Oxygen Consumption and Osmoregula-
 tion in the Goldfish in the Student
 Laboratory, 353
 Ozone and Hydrogen Peroxide Injuries
 to Green Plants, 233
- PACE, ROBERT E., 77, 78
 PAPPELIS, ARISTOTEL J., 81, 121
Papaipema nebris, The Common Stalk
 Borer, a New Pest on the Bitter Gourd
 (*Momordica* sp.) Grown in Indiana*,
 209
 Passive NO₂ Sampling in Indoor Envi-
 ronments*, 231
 Pathways of Glucose and Fructose Cata-
 bolism by *Azospirillum brasilense* and
*A. lipoferum**, 265
 PECKNOLD, PAUL C., 103
 Permanganate Oxidations of Aldehydes
 in Nonaqueous Media*, 140
 PERRILL, STEPHEN A., 460
 Perturbations in the Fecal Microflora of
 Red Squirrels Induced by Dietary
 Tannic Acid*, 265
 PETERSEN, BRUCE H., 84
 PETERS, P.A., 138
 PHILLIPS, DENISE WATERS, 283
 PHILLIPS, M.J., 138
 PHILLIPS, T.L., 392
 Photographing the Night Sky*, 276
 Physics and Astronomy, 275
 The Piltdown Hoax*, 262
 PINGER, ROBERT R., 209
Pisolithus tinctorius Inoculation En-
 hances Nursery Production of *Quercus*
rubra L. Seedlings*, 83
 Plant Taxonomy, 289
 The Pleistocene Vertebrate Collection of
 the Indiana State Museum with a List
 of the Extinct and Extralocal Pleisto-
 cene Vertebrates of Indiana, 483
 POLLEY, L. DAVID, 83
 POPE, P.E., 83
 The Portable Microcomputer and Her-
 barium Research: Distribution of
 Indiana Red and Black Oaks*, 289
 Positive Benefits of the Agronomy Coop-
 erative Education Program, 361
 Post Wind Damage Survey of Herbaceous
 Level in Bendix Woods Nature Pre-
 serve, St. Joseph County, Indiana, 199
 Potassium Transport Defective Mutant

- Strains of *Chlamydomonas reinhardtii**, 83
- Prediction of PWR Reactivity Coefficients Using LEOPARD*, 207
- Prehistoric Settlement Patterns in Northwest Warrick County, Indiana*, 78
- The Presence of Transformation of Formaldehyde in Nature*, 232
- Presidential Address: "Technologizing Science", 59
- Problems in Experimental Studies of the Zeeman Effect*, 275
- Provenience and Use of Chert from the Ditney Hills, Warrick County, Indiana*, 77
- PSI and Piaget, 379
- PUMPHRY, MICHELLE E., 435
- Pyridine Synthesis: Diels-alder Reactions of 1-Azadines with Acetylenic Carboxylates*, 144
- Quantitative Assessment of the Cleavage Preference of Guanidine-stable Chymoelastase in the Presence of Denaturant*, 140
- Quantitative Habitat Responses of *Peromyscus leucopus* and *Tamias striatus*: Results and Implications*, 461
- Radiation Effects Studied with In Situ Fluorescence Spectroscopy Techniques, 125
- RAGATZ, BARTH H., 141, 142
- Rapid Colorimetric Estimation of Acetate in Commercial Vinegar*, 140
- Rationale and Tactics for Increasing Scientific Investigation by Secondary School Students, 352
- The Reaction of Aroyl Chlorides with 1, 1-Dichloroethene: The First Reported Synthesis of β , β , β -Trichloropropiophenones*, 138
- Real Time Visualization of Nerve Function Might Be Possible Using Magnetic Dyes*, 122
- REED, DAVID K., 210, 232
- REED, GARY L., 210, 232
- Regiospecific Addition of Organocuprate Reagents to α , β -unsaturated Esters*, 137
- REINSVOLD, ROBERT J., 151
- RHODES, J.D., 83
- RHYKERD, C.L., 195, 361, 392
- RICHARDS, RONALD L., 483
- RICKETTS, JOHN A., 379, 385
- RIEMENSCHNEIDER, VICTOR, 199
- Rocky Mountain Spotted Fever Tick Testing Program in Indiana*, 209
- ROKOSZ, STEVE D., 419
- RUHL, GAIL E., 103
- RYBARCZYK, JAMES P., 139, 143
- Saliva as a Chemosignal in Intra-sexual Communication*, 459
- Sample Introduction Effects on The Excitation Mechanism in the Inductively Coupled Plasma*, 143
- SCHMITZ, T.N., 138
- School Days and First Steps in College and in Botany, 241
- SCHROEDER, CHRISTOPHER C., 123
- SCHWARTZMAN, I., 140
- Science Education, 351
- SCOTT, DONALD H., 103
- SCOTT, ROGER L., 276
- Seed Source Affects Black Walnut Seedling Growth More Than Mycorrhizal Inoculation, 84
- SEELEY, GERALD, 240
- SELBY, PATRICK J., 142
- SENFT, W.H., II, 152
- SEVER, DAVID M., 460
- SHIMER, STANLEY S., 354
- SHORT, BRIAN, 138
- SIEFKER, JOSEPH R., 143
- Silver Staining of Persistent Nucleoli in Mung Bean as a Valid Indicator of Synthetic Activity*, 124
- SIMMONS, GERRY L., 393
- A Simple Way to Produce 360° Holograms, 354
- SLABAUGH, MARVIN D., 123
- SMITH, DAVID R., 435
- Sodium Bisulfite in Chloroplast Electron Transport, 97
- Soil and Atmospheric Sciences, 391
- SOUSA, LYNN R., 143
- "Speaker of the Year" Address, 1983-84: "Drugs and the Mind", 67
- Specificity of the α -tocopherol (Vitamin E) Effect on the Lifespan of Bdelloid Rotifers*, 459
- SPENCER, DAVID F., 152
- SPROCH, NORMAN, 143

- STACK, JEFFREY G., 143
 STARK, ROBERT J., 124
 STEINHARDT, G.C., 441, 449
 STELDT, F.R., 354
 STELZER, LINDSAY S., 144
 STEVENSON, ROBERT W., 143
 STIEVENART, GINA HAMLIN, 125
 STILLWELL, WILLIAM, 81
 STOECKEL, RUDOLPH, 240
 STORHOFF, BRUCE N. 142
 A Study of the Natural History of Naturally Occurring Populations of *Magnolia tripetala* L. in Indiana, 309
 A Summer Course in Physics for Gifted Junior High School Students, 353
 SUN, I.L., 267
 A Survey and Comparison of Majors and Non-majors Introductory Biology Laboratory Manuals Emphasizing Content and Inquiry, 363
 Survey of Indiana High School Physics Teachers, 283
 Survey of Nesting Raptors in Northwestern Indiana, 505
 A Survey of Tree Growth in the Merry Lea State Nature Preserve, Noble County, Indiana*, 85
 Survey of the Woody Vegetation of the Kankakee Sand Area Section of Indiana and Illinois, 187
 SUTCH, J.A., 441
 SWENSON, FRANK, 240
 The Synthesis of a Crown Ether Designed to Exhibit Alkali Metal Cation Enhancement of Crown Ether Fluorescence*, 143
 The Synthesis and Study of Functionalized Phosphines: Phosphine-nitrile and Phosphine-amine Ligands with Long Spacer Chains*, 142
 Theory and Practice in the Career of William Lowe Bryan: Preliminary Notes*, 239
 THIEL, DANIEL P., 78
 TIEBEN, GARY L., 505
 TREHEARNE, TODD E., 143
 A Tooth-marked, Late Pleistocene-early Holocene Deer Antler (cf. *Cervalces scotti*) from Northwestern Allen County, Indiana*, 458
 Twenty-five Years of Phytoplankton on the West Fork and Main Stem of the White River: 1958-1982, 181
 Use of Mössbauer Spectroscopy to Study Indiana Oil Shales, 277
 VAN ATTA, R. LEWIS, 144
 VAN ATTA, ROBERT E., 140, 144
 VAN HORN, T.G., 449
 VAUGHN, MARTIN A., 124
 VERNON, DAVID P., 461
 Viability of Sixty-one Year Old Spores of *Marsilea quadrifolia**, 81
 The Viscosity Determination of a Non-Newtonian Fluid*, 207
 WAGENMAN, G.R., 413
 WARD, GERTRUDE L., 229
 WALKER, STUART T., 209
 Wattle and Daub in Medieval Construction*, 240
 WEATHERMAX, PAUL, 241
 WEBSTER, J. DAN, 461
 WEST, T.R., 237
 WHELLER, BRETT E., 461
 WHITAKER, JOHN O., JR., 469
 WHITE, ARTHUR J., 152
 Wildlife Use of Cultivated Fields Set Aside under the Payment In Kind (PIK) Program, 173
 WILLIAMS, ALBERT A., 354
 WILLIAMS, ROBERT D., 84
 WILSON, KATHRYN J., 84
 WINTERS, JOHN L., 181
 Working with the Scientifically/Creatively Gifted in Research, 375
 YAHNER, J.E., 449
 YODER, LARRY R., 85
 YODER, STEPHEN C., 85
 YOWELL, BRADLEY K., 143
 ZMACHINSKI, CATHERINE, 461
 Zoology, 457

