

INSTRUCTIONS FOR CONTRIBUTORS

Eligibility

Papers

Indiana Academy of Science members in good standing are eligible to submit papers for publication in the Proceedings. When a paper is signed by two or several authors, all must be members in good standing. 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). Papers reaching the editor after the deadline are ineligible. All papers must be accompanied by an abstract in the form specified below, marked "for the editor."

Abstracts

If the Divisional Chairman puts a paper on his program for the Fall Meeting, the abstract will be printed in the Proceedings regardless of the author's membership status, unless the full paper is published.

Time and Procedure for Submitting Abstracts: One typed original of each abstract, marked "for the editor" may be submitted to the Divisional Chairman before the meeting or the author may mail it direct to the editor. This should be ready for publication with a minimum of editing, i.e., in the standard abstract form (see a Proceedings abstract) and double spaced; it should not include directions to the chairman regarding time, lantern, etc. The latter information may be added to a copy marked "for the Divisional Chairman" and sent to him. The editor cannot accept carbon copies of abstracts or papers. The length of an abstract should not exceed 200 words. Items No. 1, 2, 4, 5, 6, 14, and 15 apply generally to abstracts as well as papers.

Deadline at Editorial Office

Whether sent *via* the Divisional Chairman as prescribed, or directly, all material for the Proceedings must reach the editor within 20 days following the Fall Meeting.

Preparation of Manuscripts

1. Refer to Volume 59 of the Proceedings for the accepted style of abstracts and papers, and follow this, especially in **literature citations**, headings, and footnotes.
2. Type on 11 x 8½ inch bond paper with a new ribbon, leaving ample margins. Double-space everything, including title, authors' names and institutions, footnotes, quotations, legends and literature list. This original will become the printer's copy; if it must be retyped it will be sent back to the author for this.
3. Footnotes should be kept to an absolute minimum. Necessary footnotes should be numbered consecutively throughout; asterisks are not used. Acknowledgments may be placed only in the introduction or in a footnote.
4. Literature citations should not occur in footnotes, but in an alphabetized list at the end of the paper headed "Literature Cited." The highly abbreviated form used in some publications has not been adopted for the Proceedings. If your abstract must cite literature, use footnotes for this.
5. Only initial letters of the words in titles, headings, and table headings should be capitalized.
6. Do not underline anything except scientific names.
7. All literature listed, and all tables and illustrations should be referred to in the text.
8. Tables, which are very expensive to print, should be reduced to a minimum. Avoid small tables scattered through the text. Each table should be typed on a separate letter-size sheet.

9. New authors, especially, are reminded that a scientific paper should summarize the work, not recapitulate it. It must be very much more concise than a university thesis, avoiding all unnecessary material, especially long tables and lists of little interest except to the author.
10. Major professors are urged to review all papers and abstracts by their graduate students, for both form and content, before they are sent in for publication. Of the papers based upon university theses, manuscripts carrying a pencilled O. K. and signature by the professor will be given preference over those without such indication of review.
11. 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 page ($4\frac{1}{8}$ ") and any part of the page's height. Do not mix line drawings and photographs in the same group. Legends should be on a separate letter-size sheet, numbered to correspond.
12. The originals for line drawings should be no more than twice the diameter desired for the printed figure. The lettering should be very carefully done, and of suitable size to allow for the 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 details. It is suggested that the total of illustrations and tables not exceed 20 per cent of the length of the whole paper.
13. The summary should be complete and clear in itself, and not over 4 per cent of the length of the paper. For very short papers no summary is necessary.
14. Reprints are paid for by authors, at cost. They are ordered at the time the author returns the corrected galley proof to the editor.
15. The editor needs, at the time he mails out galleys in March, current addresses for all coauthors of all abstracts and papers. Many former graduate students lose the opportunity to order reprints when mail addressed to them is returned for lack of forwarding addresses. It is suggested that the student's permanent home address be written on the reverse side of that abstract copy marked "for the editor."

Selection of Papers

Every year a few more papers are submitted than can be published with the available funds. Therefore, not all papers received can be included in the Proceedings. Of those accepted, it is usually necessary that some be reduced in length by the authors, before publication. Manuscripts prepared concisely, in the style recommended above, will receive first consideration. Authors should not expect to publish very long papers in the Proceedings. Among papers of primarily regional interest, e.g., in certain aspects of botany, zoology, geography, and anthropology, those dealing with Indiana material will be accorded preference.

The selection of papers for the Proceedings is the responsibility of the Editorial Committee.

INDEX

INDEX TO VOLUME 63

- Acaricide, 168
 Acetylacetone, reaction with phenylene-diamines, 110
 Acker, R. F., 60
Actinoplanaceae, 83
Actinoplanes, 83
 Adams, Clifford, 198, 201
Aeolosoma, reproduction of, 269
 Agglutination, 60
 Agricultural geography, Calumet, 202
 Air-conditioned light rooms for growing plants, 230
 Alkylation of 4-Nitrophthalimide, 108
 Alpha, scattering, 264
 Aluminum-bromide-hydrocarbon complexes, 140
 Anaerobiosis, 62
 Anthropology division, 45
 Anticoagulant properties of phosphorylated proteins, 127
 Antigens, 270
 Aphicide, 168
 Archaeology, Aleutian, 45
 Arthur Herbarium, plant rusts, 231
 Artifacts, Aleutian, 45
 Ash, Charles R., 185
Australopithecus, 47
 Authors, directions to, 284
 Aux Vases sandstone, Putnam County, 203

 Bacteria, anaerobis, 62
 Bacterial cell walls, 59
 Bacterial pyrogens, 59
 Bacteriology division, 59
 Baker, C. E., memorial, 27
 Barton, T. F., 211
 Becht, J. E., 219
 Benton, G. W., memorial, 28
 Berg, P. W., memorial, 29
 Berlese funnel, 163
 Beta-cyclohexylalanine, 120
 Beta-cyclohexylalanine, acyl derivatives, 120
 Bieber, C. L., 203
 Billman, J. H., 108, 120
 Bivesiculidae, biology and affinities, 271
 Bloomington, Indiana, 211
 Bombyidae, 165
 Botany division, 64
 Boundaries, township, 200
 Brandt, W. W., 133
 Brazil formation, 198
 Breccias and conglomerates, Putnam County, 203
 Brock, J. E., 266
 Brown, H. C., 140

 Bryophytes, Indiana, 92
 Buehler, J. A., 110, 120
 Bumble bees, 165
 Burr, I., 262
 Buser, F. B., 64
 Buser, K. R., 101

 Cable, R. M., 270
 Calumet region, 202
 Candicidin, 60
 Canright, J. E., 87
 Cantrall, I. J., 157
 Carlin, J., 60
 Carmichael, B. M., 264, 265
 Casein, phosphorylated, preparation and anticoagulant properties of, 127
 Cash, R. V., 108
 Cercariae of trematode family Fellodistomatidae, 270
 Chandler, L., 165
 Chemistry division, 101
 Chemistry, teaching, 101
 Chemotherapy, experimental, 39
 Chester-Meramec contact, Putnam County (map), 203
 Chester rocks in Indiana, 201
 Chromosome numbers in *Tripsacum*, 80
 Cicada, 177
 Cities and towns of Indiana geographically considered, 200
 Clay minerals, 198
 Cleland, R. E., 66
 Clifford, A. F., 102
Clostridium, 62
 Coal, identification, 198
 Coats, N. M., 248
Coccoidea, 171
 Colorimetry, copper determination by, 102
Coluber constrictor, notes on hatching of the black racer, 278
 Committees of the Academy, 6
 Complexes, Aluminum bromide-hydrocarbon, 140
 Complexes in liquid HF, 102
 Contributors, instructions for, 284
 Continuity of functions, 261
 Cook, D. J., 101
 Copolymerization, *Q-e* scheme, 103
 Copper, a reagent for, 102
 Corn, the Pasteur effect in, 65
 Coulter, N. M., 124
 County planning, 202
 County records for plants, 67
 Crustacea (isopods), 272
 Culbertson, C. G., 62
 Cummins, G. B., 231
 Cyanides, alkyl, preparation of, 131

- Daily, W. A., 6, 7, 14, 16
 Davenport, D. A., 102
 Davis, J. J., 152
 DDT, 143
 Deam, C. C., memorial, 29
 Deam, C. C., summary of his life, 232
 Deay, H. O., 180
 Delisle, A. L., 64
 DenUyl, Daniel, 73, 232
 DePauw University, 230
 Drummond, R. O., 163
 Earlham College, History of science in, 240
 Earth science collection, 208
 Eberly, W. R., 272
 Edington, W. E., 27, 230
 Electrolytic oxidation of hydrochloric acid to perchloric acid, 138
 Electromotive force, 264
 Ellner, P. D., 59
 Entomology division, 143
 Erdos, P., 262
 Ethyl 4-methyl-2-quinolone-1-acetate, 101
 Euenothera, evolution, 66
 Evolution, human, 47
 Farquharson, L. I., 80
 Fellodistomatidae (Trematoda), interpretation of larval types, 270
 Ferguson, B. L., 124
 Ferguson, J. W., 131
 Fielder, W. L., 113
 Fitzwater, W. D., 188
 Floodplain deposits, modern, 201
 Flora, Indiana, 67
 Forests, Indiana's old growth, 73
 Fossil plants of Indiana, 87
 Fossil wood, 87
 4-Nitrophthalimide, 108
 Friedel-Crafts complexes, 140
 Friesner, R. C., memorial, 32
 Frith, W. C., 140
 Garner, H. R., 61
 Garner, M., 200, 269
 Gebhard, P., 45
 Geographical influences in the location of Indiana cities and towns, 200
 Geographic sites, comparative study, 211
 Geography division, 199
 Geology, Pleistocene, 199
 Gerkin, E. H., 101
 Girton, R. E., 16, 65, 230
 Glacial geology, 199
 Golomb, M., 262
 Goodnight, C. J., 269
 Gould, G. E., 143
 Grain, Indiana, marketing of, 219
 Ground water in southern Indiana, 228
 Growing plants, air-conditioned light rooms for, 230
 Grula, E. A., 59, 61
 Guennel, G. K., 198
 Hamilton, D. W., 190
 Hanover College, 243
 Harmonic series, 261
 Hartsell, S. E., 59, 61
 Heavy particle spectrometer, 265
 History of Science division, 230
 Homomolecular, exchange reactions, 136
 Hopf, E., 261
 Hormone interaction, thyroxin-thyrotropic, 280
 Huelsman, Ben, 54
 Hughes, H. K., 261
 Hull, R., 261, 262
 Hurlbut, Floy, 208
 Hydraulic pendulum, 263
 Hydrochloric acid, electrolytic oxidation, 138
 Hydrogenation of tyrosine, 120
 Hydrogen fluoride, complexes, 102
 Indian, Deneid, 45
 Indian, prehistoric, 57
 Indian species of *Synchytrium*, 65
 Indiana Academy of Science, Library, 248
 Indiana Bryophyta, 92
 Indiana grain commerce, 219
 Indiana, Junior Academy of Science, 20
 Indiana's old growth forests, 73
 Indiana plant distribution, 67
 Indiana State Library, 248
 Indiana University, 265
 Insect Control, farm practice methods, 144
 Insecticides, effects on balance of nature, 186
 effects on man, 194
 effects on plants and soil, 190
 effects on wild life, 188
 Insects of Indiana, 1953, 152
 Insects, Orthoptera in southern Indiana, 157
 Interaction, hormonal, 280
 Ions, predicting shapes of, 102
 Isopods (terrestrial), of Indiana, 272
 Jacobs, M., 177
 Johnson, W. H., 269
 Johnston, W. H., 136
 Jones, J. A., 46
 Junior-Academy, council members, 20
 exhibits, 24
 list of clubs, 25
 minutes, 22
 officers, 20
 program, 21
 Kamemoto, F. I., 269
 Karling, J. S., 83
 Kellar, J. H., 45
 Keratinophilic microorganism, 83
 King, L. J., 255
 Kingsbury, T. M., 228

- Lange, L. H., 263
 LaRosa reaction, 110
 Lauth reaction, 110
 LeZotte, L. A., Jr., 271
 Lewis, C. L., stone mound, 45
 Light traps, 180
 Lindsey, A. A., 7
 Lingappa, B. T., 65
 Liquid latex injections, 269
 Locational influences conspicuous as to
 Indiana cities, 200
 Lockard, D. H., 168
 Ludy, L. V., memorial, 34
 Lysozyme, 61
- Magiicada septendecim*, 177
 Magnesium chloride, 113
 Man, fossil, 47
 Manuscripts, preparation of, 284
 Market areas, wholesale, 199
 Markle, M. S., 230, 240, 255
Marsilea mucronata, 64
 Martin, E., 243
 Martin, F. P., 57
 Martinsville, 225
 Mathematics competition, state-wide, 263
 Mathematics curriculum, 262
 Mathematics division, 261
 Mathers, F. C., 138
 Mealybug, 171
 Medium, synthetic, for Candicidin pro-
 duction, 60
 Meibohm, A. W., 102
 Memorials, Baker, C. E., 27
 Benton, G. W., 28
 Berg, P. W., 29
 Deam, C. C., 29
 Frelsner, R. C., 32
 Ludy, L. V., 34
 Scott, J. P., 36
 Starcs, K., 36
 Tryon, P. F., 37
 Metalation, of alkyl sulfones, 101
 Metallic complexes, 102
 Metropolitan areas, markets, 199
 Meyer, A. H., 6, 202
Micrococcus lysodeikticus, 61
 Miller, D. W., 265
 Minutes, executive committee, 9
 general session, 11
 spring meeting, 15
 Mississippian age, 201
 Molecules, predicting shapes of, 102
 Moore, G. T., 201
 Morgan County, Martinsville, 225
 Moskowitz, M., 60
 Moths, 180
 Moulton, B., 6, 7, 9, 12, 15, 16, 199
 Mozen, M. M., 127
 Murray, H. H., 198
 Murray, R. W., 47
 McClung, L. S., 62
 McClure, S. M., 208
 McCrosky, L. L., 143
- Narasimhan, R., 262
 National Academy of Sciences members,
 born, trained or employed in Indiana,
 255
 Natural selection of tripsacum tetra-
 ploids, 80
 n-Butyl cyanide, 131
 Neal, M. J., 65
 Necrology, 27
 Neolithic Balkan people, 54
 Neumann, G. K., 45
 Neurospora, threonine-less mutants, 61
 N-Hydroxymethyl-4-nitrophthalimide,
 108
 Nitrate ion, spectrophotometric determi-
 nation of, 133
 Nitrogen, active, 136
 N-Methyl-4-nitrophthalimide, 108
 Nobelists and National Academy Members
 of Indiana, listed, 253
 Noble, T. B., 45
 n-Propyl cyanide, 131
 Nutrient concentrations, 64
- Ogasawara, F. R., 270
 Oniscoidea of Indiana, 272
 O/R indicator dyes, 59
 Orthoptera, faunas in southern Indiana,
 157
 Orthopteran fauna, 157
 Osmun, J. V., 194
 Owen, D. B., 261
 Oxygen-18, 136
- Paleobotany in Indiana, present status
 of, 87
 Paleontology, human, 45
Palmoxylon, 66
 Parabolic differential equation, 262
Paramecium, sterile culture, 269
 aurelia, ciliary antigenic system, 270
 exposure to u. v., 270
 Pasteur effect, in corn, 65
 Peake, J. S., 113
 Perchloric acid, preparation of, 138
 Pennsylvanian, paleobotany, 87
 Perry, T. G., 201
 Phenol extraction, 60
 Phenylene diamine, test of o, m, p iso-
 mers, 110
 Phosphorylated proteins, preparation and
 anticoagulant properties of, 127
 Physics division, 264
 Plesmidae, 185
 Plant distribution records, 67
 Plummer, J. T., 255
 Polyembryony, chromosome numbers of
 twin plants, 80
 Population problems, 262
 Postlethwait, S. N., 64

- Potato flea, 143
 Pottery, southern types in Indiana, 57
 Powell, H. M., 39, 62
 Preparation of anti-rabies vaccines, 62
 Presidential address, 39
 Price, C. C., 103
 Proteins, phosphorylated, 127
Pseudomonas aeruginosa, 59
 Pyrrolidine, complex formation with copper, 102
 Q-e Copolymerization scheme, 103
 Quadratic forms in vector spaces, 261
 Ransome, J. C., 199
 Rasmussen, V. K., 265
 Reactions, kinetics of exchange, 136
 Red cells, 60
 Reitz, H. C., 127
 Respiration, the Pasteur effect on corn, 65
 Richmond, 255
 Riely, S. L., 198
 Rocks, minerals, classification, 208
 Rosenthal, A., 261
 Sampson, M. B., 265
 Scale insects, 171
 Schieb, L. P., 102
 Schnaitman, M., 66
 Schneller, M. V., 270
 Schuder, D. L., 171
 Schwan, T. C., 103
 Scott, T. P., memorial, 36
 Searcy, A. W., 102
 Sedimentary petrology, 198
 Shelby County, C. L. Lewis stonemound, 45
 Soil, restoration, 200
 Sonneborn, T. M., 270
 Sonnenwirth, A., 60
 Spectrometer, 265
 Spectrophotometric determination of water, 124
 Spencer, Indiana, 211
 Sphagnaceae, 92
 Sphagnum family, 92
 Starcs, K., memorial, 36
 Starkey, O. P., 200
 State-wide mathematics competition, 263
 Stone mound, 45
 Streptococci, 60
Streptomyces griseus 3570, 60
 Sulfones, metalation of alkyl, 101
 Sulphuric acid, 102
 Summers, W. A., 61
 Sutter, D. M., 266
 Swinehart, B. A., 133
Synchytrium, new Indian species, 65
 Taylor, J. G., 180
 Taylor, R. G., 200
 Teaching, use of colored chalk in, 64
 use of an easel in, 69
 Telfair, D., 200
 Thermocouples, construction of, 266
 Thompson, B., 60
 Thomson, W. E., 225
 Three fires confederation, 46
 Threonine biosynthesis and metabolism, 61
 Throw, F. E., 264
 Thyrotropic hormone, 280
 Thyroxin, 280
 Tingoidea, 185
 Tolman, R. A., 280
 Township boundaries, 200
 Toxoplasmosis, chemotherapy, 61
 Transportation of grain, 219
 Transportation, Illinois-Mississippi waterways, 219
 Trematoda, bivesculidae, biology and affinities, 270
 Trematode larvae of Fellodistomatidae, 270
Tripsacum dactyloides, chromosomal variation, 80
 Truce, W. E., 101
 Truesdell, C., 263
 Tryon, P. F., memorial, 37
 Tryosine, hydrogenation, 120
 Ulman, P. T., 143
 Underclay, block, 198
 Vaccines, anti-rabies, 62
 Valparaiso University, mathematics competition, 263
 Vanderburgh county, archaeology, 57
 Van Dyke, G. D., 264
 Vascular flora, 64
 Visher, S. S., 200, 253
 Ward, P. E., 202
 Water, ground, southeastern Indiana, 202
 a spectrophotometric determination of, 124
 Waterways, effects on marketing of Indiana grain, 219
 Ward, G. L., 278
 Wayne, W. J., 199
 Welch, W. H., 92
 Welcher, F. J., 6, 11, 110
 Wholesaling in metropolitan areas, 199
 Williams, E. C., Jr., 163
 Wilson, M. C., 143, 144, 186
 Winn, R. E., 264
 Wisconsin stratigraphy, 199
 Wood, J. M., 87
 Woodland pottery, 57
 Wright, J. S., Library, 248
 Young, F. N., 157, 186
 Yunghans, R. S., 101
 Zoology division, 269

