

# 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 type **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 A, B, C, E, F, and O 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

- A. **Refer to current copy of the Proceedings for the accepted style of abstracts and papers, and follow this, especially in literature citations, headings, and footnotes.**
- B. Type on 11 x 8½ inch bond paper with a new ribbon, leaving ample margins. **Double-space everything**, including title, author's name and institutions, footnotes, quotations, legends and literature list. 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 should be kept to an absolute minimum. Necessary footnotes should be numbered consecutively throughout; asterisks are not used. Acknowledgements may be placed only in the introduction or in a footnote. If your abstract must cite literature, use a footnote.
- D. LITERATURE CITATIONS in a paper should not occur in footnotes, but in an **alphabetized** list at the end of the paper, **headed "Literature Cited."** The highly abbreviated form used by chemists has **not** been adopted for the Proceedings. Follow this model:  
7. DOE, J. B., and R. C. ROE. 1949. New light from old radioactive carbon  
Jour. Am. Biological Soc. **34**:273-305.

- E. Only initial letters of the words in titles, headings, and table headings should be capitalized.
- F. Do not underline anything except scientific names, in headings or elsewhere.
- G. All literature listed, and all tables and illustrations should be **referred to** in the text.
- H. 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.
- I. 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.
- 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. Of those 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.
- K. 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 (4½") 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.
- L. The originals for line drawings need 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.
- M. The summary should be complete and clear in itself, and not over 4 percent of the length of the paper. For very short papers no summary is necessary.
- N. Reprints of papers are paid for by authors, at cost. They are ordered at the time the author returns the corrected galley proof to the editor. Abstracts are not reprinted.
- O. The editor needs, at the time he mails out galley 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. 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, geology, 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

- Action of lithosperm in mice, 312.  
Adams, W. R., 90.  
Age pyramids for Indiana's Counties and larger cities, 187.  
Agglutination reactions, effect of formaldehyde on red cell, 98.  
Aggression and avoidance in the C57BL mouse, 298.  
Aging of reagent solutions in precipitation processes, 128.  
Alpha particle irradiation of germanium at 4.2°k, 278.  
Annual rings, relation of, to multiple flushes of growth in several species of *Quercus*, 104.  
Anthophilous insects of Indiana, 160.  
Anthropology division, 90.  
Axenic cultivation of planarians, 301.
- Babcock, R. F., 128.  
Bacteriological problems in food, 99.  
Bacteriology division, 98.  
Barium sulfate, effect of age of reagent solutions on particle size of, 128.  
Barton, Jay II, 301.  
*Basidiomycete* which sporulates in artificial culture, 107.  
Beals, H. O., 103.  
Bee, alkali, 135.  
Belinfante, F. J., 280.  
Bell, W., 298.  
Belohlov, L. R., 109.  
Bentley, A. F., memorial, 56.  
Berka, C. A., 303.  
Bertrand, A. R., 232, 233.  
Beta decay of  $Ru^{108}$ , 281.  
Biebel, P., 102.  
Bieber, C. L., 185.  
Blanchard, R. E., 297.  
Blasingham, E. J., 90.  
Botany division, 101.  
Bray, R., 281.  
Breneman, W. R., 312.  
Brumbaugh, J. H., 301.  
Brumfiel, C., 274.  
Buried forests in Indiana, 103.  
Burr, I., 274.  
Bybee, H. P., memorial, 58.
- Campaigne, E., 109.  
Canright, J. E., 268.  
Carmack, M., 312.
- Cave planarians, preliminary studies on pigmentation in, 300.  
Cephalopods, Mississippian of Putnam Co., 185.  
Characterization of N-adic equivalence relations, 274.  
Clark, J. A., 6, 7.  
Class administration in courses using a textbook, 274.  
Cleland, R. E., 8, 17.  
Coats, N. M., 7, 14.  
*Coleoptera-Caraidae*, prey records of ground beetles, 136.  
Conklin, R. L., 280.  
Contributions to the flora of Wayne County, III, 290.  
Coordination complexes, calculation of formation constants using computers, 111.  
Cope, J. B., 316.  
Corn borer, location of larvae of the European, *Pyrausta nubilalis*, in dent corn, 155.  
Correll, M., 277.  
Costas, P., 199.  
Cross, E. A., 135.  
Crull, H. E., 6, 7, 9, 16, 18.  
*Culiseta melanura*, occurrence of, in Indiana, 137.  
Cunningham, R. W., 281.  
Cyclic sedimentation, 205.
- Daily, F., 101.  
Daily, W. A., 6, 7.  
Daniels, R. P., 107.  
Davis, J. J., 135.  
Davis, R. C., 298.  
Deay, H. O., 135.  
DeLanney, L. E., 302.  
Denenberg, V. H., 298.  
DenUyl, D., 243, 244.  
Development of the spleen of *Taricha torosa* and its experimental modification, 302.  
Differences between normals and psychotics in the perception of serially diffused visual stimuli, 299.  
*Diptera*, a list of species collected from blossoms, 160.  
Divisional chairmen, 6.  
Drainage in Indiana and soil use, 249.  
Driver, H. E., 90.

- Drosophilidae* found in tomato fields in Indiana, 138.
- Duncan, W. G., 232, 234.
- Ecological correlations in Indiana, some, 101.
- Ecological sampling methods for trees, comparison of, 101.
- Edington, W. E., 56.
- Edwards, P. D., 274.
- Effect of decrease in size of reward on runway latency scores in the hooded rat, 297.
- Effect of formaldehyde on the agglutination of red cells by antiserum against artificially attached antigens, 98.
- Effect of hue, brightness and saturation on color preference, considering various contexts, 297.
- Electric light traps and their uses in entomology, 135.
- Electric computers, applications to chemical computations, 111, 117.
- Entomology division, 135.
- European corn borer, *Pyrausta nubilalis* (Hbn.), location of larva in dent corn, 155.
- Everly, R. T., 136.
- Evidence of introgressive hybridization and mutation in certain Colorado populations of *Aquilegia*, 292.
- Executive committee, 6.
- Experimental comparison of A-C powered diode and hydrogen ion gauge circuits for leak detection in a high vacuum system, 277.
- Extent of effectiveness of natural selection, 251.
- Factors affecting the toxicity of sodium pentachlorophenate to fish, 303.
- Fan, H. Y., 279.
- Farquharson, L. I., 102.
- Favinger, J., 135.
- Fischbeck, H., 278.
- Fischer, R. B., 109, 128.
- Fish, toxicity to, 303.
- Food, bacteriological problems in, 99.
- Forests, buried, of Indiana, 103.
- Forests of the lower Wabash Bottomlands during the period 1870-1890, 244.
- Formation of annual rings, relation of, to multiple flushes in several species of *Quercus*, 104.
- Fossil cephalopods of Mississippian age, central Putnam County, Indiana, 185.
- Free radical additions, some, to perfluoro-1-heptene, 109.
- Fuller, W. R., 275.
- Galloway, J. J., 175.
- Garofolo, L., 298.
- Gastrointestinal activity in hunger and after food, the question of hunger pangs, 298.
- Geologic observations on Southhampton Island, 176.
- Geology and geography division, 175.
- Gerritsen, A. N., 280.
- Girton, R. E., 260.
- Glacial period, Indiana's climate during, 183.
- Gobeli, G. W., 278.
- Goniatites, western Indiana, 185.
- Goodnight, C. J., 322.
- Gopher, 303.
- Gould, G. E., 136.
- Graves, G. H., 274.
- Grollig, F. X., 92.
- Guard, A. T., 104, 286.
- Guernsey, L., 215.
- Gunther, W. C., 303.
- Hall, M., 286.
- Hamilton, J. H., 280.
- Harrison, E. F., 99.
- Hart, John Fraser, 175, 187.
- Heats of combustion, a method of calculating, of organic compounds, 122.
- Helianthus*, natural hybrids, 286.
- Hershman, J. B., memorial, 59.
- High-speed calculation of least-squares best consecutive formation constants of metal-ion complexes using an electronic computer, 111.
- half-wave potentials and slopes of polarographic waves using an electronic computer, 117.
- History of early development of game regulations in Indiana, 256.
- Indiana moss studies, 243.
- science division, 243.
- Homologies in the male reproductive system of the California pocket gopher (*Thomomys bottae navus* Merriam), 303.
- Hopp, W., 300.
- Hoskins, J. H., memorial, 61.
- Howe, R. H. L., 277.
- Hsu, C. G., 109.
- Hummel, A. D., 275.
- Hunt, H., 122.
- Huston, H. H., memorial, 62.
- Hybrid population, study of a natural, among three species of *Tragopogon*, 286.
- Indians, prehistoric, 90.
- Industrial mineral resources of Washington County, Indiana, 177.

- Industrial minerals in Indiana's economy, 177.
- Influence of nitrogen and clippings on the roots of two grasses, 233.
- Information handling and numerical control, 279.
- Ingraham, J. S., 98.
- Insect abundance in Indiana in 1957, 150.
- Insect pests, some new, of trees and shrubs of Indiana, 145.
- Insects and other arthropods of economic importance in Indiana in 1957, 150.
- Inter-relationship of applications and mathematical research, 276.
- Interurban distance in Indiana; an evaluation of techniques, 199.
- Introgressive hybridization, 292.
- Irrigation in Indiana, 249.
- Jamieson, W. A., memorial, 64.
- Japanese beetle infestation in Newton County, 136.
- Japanese beetle in Indiana, notes on distribution of, 136.
- Johnson, Jr., J. I., 298.
- Johnson, W. H., 6, 7, 73, 301.
- Johnston, R. B., 96.
- Jump, J. A., 101.
- Junior Academy—council members, exhibits, minutes, officers and program, 49.
- Karas, G. G., 297.
- Kennedy, R. J., 109.
- Killing action, a new type of, in a stock of *Paramecium aurelia* from Panama, 303.
- King, L. J., 287.
- Konetzka, W., 98.
- Kraybill, H. R., memorial, 66.
- Laff, R. A., 279.
- Langston, R. G., 232.
- Large aggregation of larval millipeds, *Zinaria butleri* (McNeill), in Brown County, Indiana, 171.
- Lark-Horovitz, K., 278.
- Laubengayer, R. A., 6, 7, 11.
- Lawrence, J. L., 274.
- Lehker, G. E., 173.
- Lewis, G. W., 297.
- Life in Indiana during the glacial period, 183.
- Lifetime, minority carrier, in indium antimonide, 179.
- Light traps, 135.
- Limestone, specific surface and reaction rate of calcitric, in neutralizing soil acidity, 237.
- Lindsey, A. A., 101.
- List of the pteridophytes and monocotyledonous species in Wayne County, Indiana, 290.
- Lithosperm, the action of, on mice, 312.
- Localization experiment for teaching geometry, 275.
- Lorentz-Covariance of commutation relations, 280.
- Lounsbury, R. W., 225.
- Lovell, C. W., Jr., 232.
- Lovell, G., 297.
- Luginbill, P., memorial, 68.
- Luminescence excited by vacuum ultraviolet radiation, 280.
- Lytle, C. F., 304.
- Madinger, F. L., 136.
- Magnetic fields in the solar atmosphere, 277.
- Markle, C. A., 12, 190.
- Martin, F. P., 90.
- Martin, H. J., 279.
- Martin, W. C., 286.
- Mathematics division, 274.
- Mathematics of the future, 274.
- McBee, E. T., 109.
- McCormick, E. J., 297.
- McCoy, S., 7.
- McGregor, D. J., 177.
- McMasters, D. L., 111, 117.
- Measurement, absolute, of beta-activities using sources of saturation thickness, 278.
- Measurement and shapes of beta spectra, 280.
- Melhorn, W. N., 194.
- Membership list, 19.
- Memorials,
  - Bentley, A. F., 56.
  - Bybee, H. P., 58.
  - Hershman, J. B., 59.
  - Hoskins, J. H., 61.
  - Huston, H. A., 62.
  - Jamieson, W. A., 64.
  - Kraybill, H. R., 66.
  - Luginbill, P., 68.
  - O'Grady, D. C., 69.
  - Stantz, G., 70.
  - Welte, Sister C., 71.
- Method of calculating the heats of combustion of organic compounds, 122.
- Methods of sampling in forest ecology, 101.
- Michaud, H. H., 7, 243, 256.
- Michels, K. M., 297.
- Miles, S. R., 101.
- Miller, C. A., 301.
- Millipeds, aggregation of, 171.
- Mississippian-Devonian Boundary, revision in White and Benton Counties, Indiana, 194.

- Moffat, A., 122.  
 Montgomery, B. E., 160.  
 Morgan, W. P., 7, 11.  
 Morris, C. S., 282.  
 Mosing, L. W., 299.  
 Moss studies, history of Indiana, 243.  
 Motto, H., 237.  
 Mounds, archaeological excavation of prehistoric Indian, 96.  
 Mullin, C. A., 155.  
 Mumford, R. E., 316.  
 Murray, H. H., 205.  
 Murray, H. L., 99.
- Natural hybridization in *Helianthus*, 286.  
 Nature of variations, 251.  
 Necrology, 56.  
 Nelson, T. C., 98.  
*Netrium*, conjugation in, 102.  
 New type of killing action in a stock of *Paramecium aurelia* from Panama, 302.  
 Nichols, R. E., 98.  
 Nielsen, K. L., 276.  
 Notes on artificially induced nesting of the alkali bee, *Nomia melanderi* Ckll., 135.  
 Nuclear proteins and genetic information, 301.
- Officers of the Academy, 6.  
 O'Grady, D. C., memorial, 69.  
 Ohlrogge, A. J., 232, 234.  
*Opilionids* from Indiana, 322.  
 Optical instruments useful in the bacteriological and biological laboratory, an improved combination, 99.  
 Orchard soil management, effect of different systems of, on soil moisture and water penetration, 232.  
 Osmun, J. V., 150.  
 Oswalt, D. L., 233.  
 Ottawa in the early historic period, 90.  
 Ovary, effect of stilbestrol on pullet, 309.  
 Overmire, T. G., 101.
- Paleobotany, history of, in Indiana, 268.  
 Paleozoic rocks in Indiana, effect of geologic processes on economic resources of state, 178.  
 Parallelism of cheek skin color in *Plethodontid* salamanders, 303.  
 Pelton, J. E., 286.  
 Pelton, J. S., 292.  
 Pennsylvanian stratigraphy and sedimentation, 205.  
 Perfluoro-1-heptene, free radical additions to, 109.
- Periodic solutions of nonlinear differential equations, 275.  
 Perry, T. G., 175, 178.  
 Pests in Indiana, the ten most important plant feeding, 171.  
 Petrology of Southampton Island, Northwest Territory, 225.  
 Physics division, 277.  
 Physic research in a small institution, 282.  
 Pigmentation in cave planarians, preliminary studies on, 300.  
 Planaria, 301.  
 Plant physiology at Purdue in the nineteenth century, the teaching of, 260.  
 Plant taxonomy division, 286.  
 Polarography, calculation of half-way potentials by the method of least-squares, 117.  
 Pollination, mechanisms of, and seed dispersal in *Lothops*, 101.  
 Porter, C. L., 107.  
 Postlethwait, S. N., 104.  
 Pottery ornaments from Rio Tapajos, Brazil, 92.  
 Precipitation processes, aging of reagent solutions in, 128.  
 Preparation of some *w*-trifluoro-allyphatic acids, 109.  
 Presidential address, 73.  
 Prey records of ground beetles (*Coleoptera-Carabidae*), 136.  
 Prickett, P. S., 99.  
 Psychology division, 297.  
 Puerckhauer, G. W. R., 109.
- Racoons, visual discrimination by, 298.  
 Radical addition of hydrogen bromide to 2,4,4-Trimethylpentene-2, 109.  
 Radioactive fall-out, influences on agronomic field experimentation with radioisotopes, 234.  
 Reactions of diethyl oxalate with ortho-substituted anilines, 109.  
 Reactions (d,p) in lead, 279.  
 Reclamation of strip-mined lands in Vigo County, Indiana, 215.  
 Records of fresh water medusae in Indiana, 304.  
 Red blood cells, effect of formaldehyde on agglutination of, 98.  
 Reinforcement, strength of secondary, as a function of the quality of food reward, 297.  
 Representatives, two, of a tropical suborder of *Opilionids* (*Arachnida*) found in Indiana, 322.  
 Reproductive system, male California pocket gopher, 303.  
 Resistance anomalies in binary alloys at low temperatures, 280.

- Reynolds, A. E., 303.  
 Rice, W. J., 7.  
 Roberts, C. W., 109.  
 Robinson, R. L., 281.  
 Role of entomology in science fair projects, 135.  
 Ross, A. E., 275.
- Salter, L., 277.  
 Sampling methods, in forest ecology, compared, 101.  
 Schaal, L. A., 265.  
 Schaap, W. B., 111, 117.  
 Schneller, M. V., 302.  
 Schuder, D. L., 145.  
 Schultz, R., 15.  
 Schuster, R. L., 225.  
 Seed dispersal, and mechanisms of pollination, in *Lithops*, 101.  
 Sensitivity of *Streptomyces* species to ultra-violet light, 98.  
 Serpent Mounds Site, Rice Lake, Ontario, the finding after two years of work at, 96.  
 Shiner, V. J., Jr., 109.  
 Shrigley, E. W., 98.  
 Single root fertilization of corn, 232.  
 Siverly, R. E., 137.  
 Slope retreat, the misleading antithesis of Penckian and Davisian concepts of, in waning development, 212.  
 Smith, C. A., Jr., 138.  
 Smith, D. M., 286.  
 Smith, M. L., 109.  
 Smith, R. E., 312.  
 Soil acidity, specific surface and reaction rate of calcitric limestone in neutralizing, 237.  
 Soil compaction, some aspects of, 232.  
 Soil science (affiliate), 232.  
 Soils of Indiana, their progressively wiser use of, 249.  
 Specific surface and reaction rate of calcitric limestone in neutralizing soil acidity, 237.  
 Spleen of *Taricha torosa*, the development of the, and its experimental modification, 302.  
 Sporulation of *Basidiomycete* in artificial culture, 107.  
 Stantz, G., memorial, 70.  
 Strip-mined lands in Vigo County, Indiana, 215.  
 Stromatoporoid and coral reefs in Indiana, 175.
- Summer colony, some observations on, of *Myotis Lucifugis*, 316.  
 Sunderman, J. A., 177.  
 Surface integral, the concept of, 274.  
 Surface investigations in germanium, 281.
- Teaching of plant physiology at Purdue in the nineteenth century, 260.  
 Teel, M. R., 233.  
 Thompson, H. B., 279.  
 Tinkle, W. J., 251.  
 Transgressions and regressions of early Allegheny (Pennsylvania) seas in Indiana, 205.  
*w*-Trifluorotridecanoic acid, preparation of, 109.  
 Tripsacum-Corn hybrid, 102.  
 Tuan, Yi-Fu, 212.  
 Tukey, R. B., 232.  
 Turner, L. H., 274.
- Ultra-violet radiation, sensitivity of *Streptomyces* to, 98.  
 Undergraduate curricula, 275.
- Van Vertha, J. E., 109.  
 Visher, S. S., 183, 249.
- Warrick County, archaeology, 90.  
 Washington County, industrial minerals of, 177.  
 Wayne, W. J., 176.  
 Weather records in Indiana, early, 265.  
 Weber, G. C., 99.  
 Weed, on the origin of the term, 287.  
 Welch, W. H., 7, 15, 243.  
 Welcher, F. J., 6, 7, 10.  
 Welte, Sister Carmella, memorial, 71.  
 White, J. L., 237.  
 Wife stealing in central Mexico, 90.  
 Wilkinson, S. R., 234.  
 Williams, E. C., Jr., 300.  
 Williams, H. R., Jr., 99.  
 Wilson, N., 316.  
 Wright, R. H., 297.
- Yuncker, T. G., 7, 8.  
 Young, F. N., 171.  
 Youse, H. R., 8.
- Zeller, F. J., 309.  
*Zinaria butleri*, 171.  
 Zoology division, 300.













