

CHEMICAL REVIEWS

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ARTICLES FOR CHEMICAL REVIEWS—SUGGESTIONS TO AUTHORS

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I. GENERAL STATEMENT

Subject Matter. Articles for *Chemical Reviews* are to be authoritative, critical, and comprehensive reviews of recent research, both theoretical and applied, in the various fields of chemistry. The fundamental purpose of a review article is to promote the advancement of chemistry by a systematic presentation of the facts, theories, ideas, and mechanisms which have developed over a period of years. Reviews conserve the time of future chemists, since they do not have to read several hundred original articles to find out what has been done. Hence the subject should be carefully selected and the scope defined in order to provide unity of thought and logical arrangement of ideas. The topic should have a considerable literature background and should not have been reviewed during the previous ten to twelve years in *Chemical Reviews* or in any other publication (journal, monograph, or book, either domestic or foreign).

The articles must be readable. *Chemical Reviews* is not a repository of compilations of data, calculations of properties, lists of patents, mere bibliographies, or historical recitations of events.

The readers of *Chemical Reviews* are teachers, students (undergraduate and graduate), practicing chemists, research chemists, and scientists in fields closely related to chemistry. In writing the article, the author should assume that these readers are competently trained in fundamentals but that they have no extended knowledge of the specialized topic. Material which is available in modern undergraduate and graduate text books and comprehensive treatises should *not* be repeated, but a reference to such sources should certainly be given. The presentation should be at a high level, not elementary.

II. PRELIMINARY SURVEY AND APPROVAL OF ARTICLES

Articles for *Chemical Reviews* are by invitation from the editor as the result of suggestions by the editorial board or by any chemist who has made a preliminary survey of the literature in a given field. The editor will be pleased to receive suggestions for timely reviews and will discuss with prospective authors the suitability of their manuscripts. An effort is made to plan a publication schedule about a year in advance.

In order to assist the editor in evaluating a subject suggested for *Chemical Reviews*, authors are requested to send to him two copies of the following material.

1. A two- or three-page detailed topical outline. This should be complete with formulas, structures, and equations, so that it may be checked against other outlines in the editor's files to guard against duplication of effort.
2. The last date of a previous review in the field. A cumulative index to *Chemical Reviews* for Vol. 1 through 60 was published in the December issue of 1960. Annual indexes appear in the December issue of each volume. The next cumulative index is planned for 1970.
3. An estimate of the number of references (*i.e.*, 50, 100, 200, 300, or more).
4. An estimate of the number of double-spaced typewritten pages (50, 100, 200, 300).
5. A tentative date when the author could submit the manuscript (3, 6, 9, or 12 months).

This material will be examined by the editor with advice from the referees and the editorial board. After receiving preliminary approval the author should proceed with the writing of the review. He will have the assurance that the article will be accepted, providing, of course, that he does a good job of writing.

At the time when the editor sends his preliminary approval of the review, a definite date will be set for receipt of the manuscript.

Review manuscripts which are sent to the editor without preliminary approval will also be carefully examined and, if acceptable, will be placed at the end of the prearranged publication schedule.

III. DIVISIONS OF THE MANUSCRIPT

Authors should examine previous issues of *Chemical Reviews* and read several of the review articles in the same general field as that in which they propose to write. All articles should have:

A. *Salutation.*

Title. This must be selected with great care. It must be precise and suitable for accurate indexing so as to indicate the chemical content rather than a chemist's name or historical concept.

Authors' Names. In general, the senior author's name should be placed first.

Name and Location of Institution.

Table of Contents. The items should be descriptive so that they can serve in the place of an abstract or sum-

mary. Authors should consult previous issues for format. Note that main divisions are indicated by Roman numerals, subdivisions by capital letters and Arabic numbers, and subclasses by lower-case letters. This classification of material must correspond to the same parts in the body of the article.

The Body of the Review.

B. Introduction

This should be about one or two pages long and should state precisely the scope and limitations of the review and the years covered. The nomenclature (organic or inorganic) or notation system used should be clearly and specifically stated. The names and numbering systems used by *Chemical Abstracts* in the recent indexes as well as common or trivial names should be given. The names used in the article should be consistent and unambiguous. In general, the official *Chemical Abstracts* names are preferred. It is the author's responsibility to select the proper nomenclature before the main body of the review is written and then to use the chosen notation consistently throughout. Authors should remember that the review article is designed for service to the readers and hence must indicate the names or topics which will enable the reader to locate future articles in *Chemical Abstracts*.

C. The Review

The material in the review should be clearly and logically arranged, with main divisions and subdivisions. It should be organized according to the reactions or theories involved and usually not according to purely historical sequence. In general, the entire article should not be chronological.

The length of an article should be determined by the character of the material, the amount of material, and the number of references. The editorial board does not dictate the exact length. However, this does not mean that authors should take up excessive space by using a lot of unnecessary words or phrases. Repetition and redundant phrases should be avoided. The style should be clear and concise. Do not give an historical development and then repeat this material later. Weave in the development of the topic under the proper scientific heading. If the development up to a certain year has been given in an article, book, or monograph, do not repeat this material, even if it has never appeared in *Chemical Reviews*. Cite the reference.

Try to make each sentence and paragraph convey definite information to the reader. The comments above should not be interpreted to mean hazy, superficial, nonspecific writing. The facts, laws, and theories should be so clearly presented that the reader does not have to examine the original literature to get a picture of the results. Do not give experimental details, but do

state the general method. Compare the results such as percentage yields, order of kinetic reactions, accuracy, precision, and reproducibility. The readers are supposed to go to the original references to obtain exact experimental procedures.

New, original, experimental, and theoretical work should be published in other journals. However, the critical examination and the evaluation of prior work in a review article may lead to hypotheses, theories, or laws which coordinate and clarify apparently disconnected data. Such interpretations are entirely suitable for inclusion.

The material should be treated objectively and critically—avoiding personalities and polemics—because the fundamental purpose of a review is to advance the science of chemistry.

D. Organization and Writing

If a considerable number of compounds have been made by one general reaction, these are conveniently summarized in suitable tables with reference numbers. In physicochemical articles the notation and meaning of symbols should be specifically defined at some suitable point. Carefully selected tables of data and graphs may be used to illustrate theories, equations, and laws. Tables and graphs should be numbered consecutively and referred to in the text by number: *i.e.*, use "Figure 5," "Table II," etc., and not "the following figure," "the above table," etc. For reasons of saving space in printing, tables should be distributed throughout the paper and not grouped at the end in a special section or an appendix.

In order to avoid repeating long complicated names of compounds in the text, the structures may be drawn and denoted by Roman numerals. "Webster's Dictionary" gives the Roman numeral scheme. In articles having a number of equations (chemical or mathematical) denote these by placing (Eq. 1), (Eq. 2), (Eq. 3) at the right side of the equation and refer to them in the text as Equation 1, Equation 2, etc. Do not put these Roman or Arabic numbers in parentheses. Arabic numbers in parentheses on the same line as the text are strictly reserved for references. This avoids confusion with subscripts and superscripts for isotopes (${}_{6}\text{C}^{12}$) or mathematical expressions with factors raised to a power ($y = ax^4$).

In the text when referring to data reported by a number of co-authors, it is courteous to give all of the names on the paper or else to omit all of them (preferable). For example:

Preferred:

"The heat of hydrogenation of styrene to ethylcyclohexane was found to be -77.8 kcal. per mole (164)."

Undesirable:

"Dolliver, Gresham, Kistiakowsky, and Vaughn (164) studied the hydrogenation of styrene and found that complete reduction to ethylcyclohexane involved a heat of hydrogenation amounting to -77.8 kcal. per mole."

Try to avoid expressions such as "Dolliver, *et al.*" or "Kistiakowsky and co-workers." The example cited above also illustrates the importance of simple construction and elimination of long, complicated, wordy sentences.

Scan your manuscript for "idle words" and delete them. Various introductory phrases which are quite natural in speech should not be used. For example, "It will be recalled that . . ." and "It is obvious that . . ." are redundant.

Try to avoid the use of personal pronouns: I, we, you, he, she, they. Recasting the sentence without pronouns usually makes for clear precise statements and avoids ambiguity in antecedents. Except in very special instances do not use direct quotations. State the author's data, theories, and conclusions fairly, but avoid selecting a phrase, a sentence, or a paragraph out of its setting in the context of the whole article.

Read the April 23, 1954, issue of *Science*, especially the articles by Struck and by McCartney (*Science*, **119**, 522, 525 (1954)). Webster's "New International Dictionary" (unabridged) is an excellent source of information about words, phrases, and sentences.

E. Copyright Responsibility

Authors of review articles must exercise great care to avoid infringement of the copyrights of previously published articles in journals, books, monographs, or other reviews. Copyrighted material must not be incorporated in a paper unless specific written permission is obtained from the holder of the copyright—either U. S. or foreign. The United States is a party to the Geneva International Copyright Agreement by which the signatory countries agree to respect one another's copyright laws. The bulletin "Copyright Law of the U. S. A." may be obtained at a cost of 20 cents from Copyright Office, The Library of Congress, Washington, D. C. 20025.

An author *must avoid copying exactly* pages, paragraphs, drawings, or graphs, unless he secures written permission in advance from the prior authors, the society, or the publishing company. The replies to these requests should be kept in his permanent files for his protection. When an author does secure such written permission, he must not only cite the reference and the source but include a statement that "The author wishes to thank XY Co. (or Society) for permission to reproduce Fig. 1 and 2 and Table II" in the ac-

knowledgment paragraph at the end of the article, just before the references.

The copyright laws cover the *exact* reproduction (photographic, tracing, scale drawing, or typesetting) of previously printed material. An author may rewrite text material completely, rearrange tabular material, or change drawings and graphs so that they are quite different from the original.

Securing permission to incorporate copyrighted material in an article is the responsibility of the author(s). Since the editors cannot read the hundreds of references and cross-check these with the manuscript, they must trust the author(s) to follow the above instructions.

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Articles in *Chemical Reviews* which appeared prior to 1960 are copyrighted by the Williams and Wilkins Co., Baltimore, Maryland, and requests concerning reproduction of all material in Vol. 1 through 59 should be addressed to the above firm.

F. Footnotes

Footnotes should be avoided, since they distract the attention of the reader and are of no value in reviews. They may be used only for auxiliary information extraneous to the subject matter. The inclusion of a reference in a footnote is not permissible; a number to a reference in the bibliography may be given when necessary.

G. Acknowledgments

All acknowledgments should be placed in a separate paragraph at the end of the review just before the references. Include acknowledgments to copyright owners, federal agencies, state agencies, philanthropic gifts, thanks to fellow chemists for assistance, everything.

H. References

The references must be arranged alphabetically according to the names of the authors and also chronologically when there are several references under the same name(s). The official *Chemical Abstracts* abbreviations for the names of the journals should be used and the volume, page, and year should be given. If a reference is to an obscure or generally unavailable journal, the *Chemical Abstracts* reference should be given in addition to the original. For books, the author(s), the title, the publisher's name and address, the year of publication, and the chapter or page(s) should be included. However, regularly published volumes such as *Organic Syntheses*, *Inorganic Syntheses*, *Biochemical*

Preparations, Annual Reports of the Chemical Society, Annual Review of Biochemistry, etc., should be treated as serials. The names of the submitters or authors of chapters and not the editors should be given. For example:

- (27) Cookson, R. C., *Ann. Rept. Progr. Chem.* (Chem. Soc. London), **54**, 174 (1957).
 (28) Lepp, A., and Dunn, M. S., *Biochem. Prepn.*, **4**, 83 (1955).
 (29) Reif, D. J., and House, H. O., *Org. Syn.*, **38**, 26 (1958).
 (30) Simons, J. F., *Inorg. Syn.*, **3**, 184 (1950).
 (31) Truce, W. E., *Org. Reactions*, **9**, 37 (1957).

Citations of patents should include the author's name (or the name of the company if no individual is named as the patentee), the patent number, and a reference to *Chemical Abstracts*, *Chemisches Zentralblatt*, *Friedländer*, or other source.

Give the names and initials of all the authors. Use a separate number for each reference and repeat the abbreviation of a journal. Never use "ibid." in the typed list of references.

In deciding on the proper alphabetical order, use the first capitalized letter of the last name and then the alphabetical sequence of succeeding letters. Compound names with a prefix such as de, du, la, von, etc., are arranged according to the first capitalized part. If an author is in doubt as to the proper alphabetical sequence of such names, the practice in previous issues of *Chemical Reviews* should be noted. Some examples in proper sequence are:

<i>Under B</i>	<i>Under L</i>	<i>Under M</i>
du Barry	Lake	Mabry
Becker	La Mer	MacBride
von Behring	Lancey	Macginnis
de Bell	von Link	McFerson
		Mellor

If the article is short (3 or 4 pp.), give the first page of the article in the reference. If the article is long (over 5 pp.), refer to the page on which the reader will find the data mentioned in the text.

Illustrative references:

- (1) Abramovitch, R. A., and Adams, K. A. H., *Can. J. Chem.*, **40**, 864 (1962).
 (2) Abramovitch, R. A., and Muchowski, J. M., *Can. J. Chem.*, **38**, 554 (1960).
 (3) Allen, C. F. H., and van Allen, J. A., *J. Am. Chem. Soc.*, **73**, 585 (1951).
 (4) Allen, C. F. H., and Wilson, C. V., *J. Am. Chem. Soc.*, **65**, 611 (1943).
 (5) Allen, C. F. H., Young, D. M., and Gilbert, M. R., *J. Org. Chem.*, **2**, 235 (1938).
 (6) Allen, F. L., Brunton, J. C., and Suschitzky, H., *J. Chem. Soc.*, 1283 (1955).
 (7) Allen, F. L., and Suschitzky, H., *J. Chem. Soc.*, 3845 (1953).
 (8) Antrick, O., *Ann.*, **227**, 360 (1885).
 (9) Arbuzov, A. E., *J. Russ. Chem. Soc.*, **45**, 74 (1913).
 (10) Arbuzov, A. E., and Kitaev, Y. P., *Dokl. Akad. Nauk SSSR*, **113**, 577 (1957); *Chem. Abstr.*, **51**, 14605 (1957).
 (11) Arbuzov, A. E., and Kitaev, Y. P., *Tr. Kazansk. Khim. Technol. Inst.*, **23**, 60 (1957); *Chem. Abstr.*, **52**, 9980 (1958).
 (12) Benson, S. W., "The Foundation of Chemical Kinetics," McGraw-Hill Book Co., Inc., New York, N. Y., 1960, p. 342.

IV. STRUCTURAL FORMULAS, GRAPHS, ILLUSTRATIONS, FIGURES

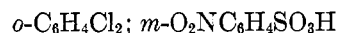
Illustrative material is of two types: pen and ink drawings, which are reproduced by the line engraving process, and glossy photographs.

All drawings should be made with India ink on tracing cloth or paper, white paper, or blue-lined coordinate paper. The lettering of the numerals and legends at the sides and bottoms of graphs, as well as of any numerals or words appearing on the graph itself, should be large enough to be seen clearly when the drawing is reduced. Most figures can be advantageously drawn for a reduction of from 50 to 75%, i.e., a drawing measuring 6 by 8 in. may be reduced to one measuring 3 by 4 in. or even 1.5 by 2 in.

The printers have difficulty in setting up certain fused-ring structures, coordination structures of complex compounds, stereochemical conformation structures, perspective diagrams, phase diagrams, π -complexes, and polarized structures using curved arrows. These are very expensive to set by hand. Authors should therefore draw these diagrams with India ink on tracing cloth or paper, plain white paper, or blue-lined coordinate paper. A stencil should be used for the lettering, and formulas and letters should be made twice as large as desired in the final cut. These drawings can be reproduced photographically. Legends for the figures should be typed on a separate page.

Linear formulas and simple structures where the bond lines make standard angles (90° , 45° , 60°) with each other can be set. Consultation of back issues of the journal will indicate the formulas that can be set in type. The Senior Production Editor will answer any queries as to the possibility of setting certain formulas in type.

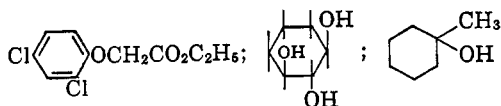
Use dots only for electronic formulas, lines for covalent linkages, and plus and minus signs for charges on ions. For the unsubstituted phenyl radical, use C_6H_5 ; do not use the hexagon. Even disubstituted benzene derivatives can be typed as



Use the hexagon only when necessary to avoid am-

biguity or when discussing certain points concerning mechanism, polarization, or resonance.

The Kekulé formula should be used for aromatic compounds to distinguish them from the cycloparaffin derivatives, *e.g.*



Photographs should be in the form of clear black-and-white prints on glossy paper. Care should be taken to see that they cannot be bent or folded in handling. Paper clips should not be attached to them, since all imperfections in the original copy are reproduced.

V. TYPING

Manuscripts should be typed double-spaced on one side of white bond paper measuring 8.5×11 in. Bond paper of 14–16 lb. weight is recommended. The pages should be numbered consecutively in the upper right-hand corner.

Formulas and equations should be separated from the text by a space. Linear formulas may be typed; more complex structures should be neatly and accurately drawn with India ink, using a stencil for any lettering (see the third paragraph of section IV). The formulas should not be crowded. The copy should be clear, unambiguous, and easily legible, as the manuscript is to be set in type by an operator who is not a chemist.

VI. SUGGESTED PROCEDURE FOR PREPARATION OF MANUSCRIPT

The problem of writing the review and arranging the references without errors may be solved in a number of ways. One of the writing techniques which involves the minimum amount of labor and which eliminates reference errors utilizes the following steps:

1. Complete the literature survey, recording the material in any fashion you happen to prefer: punched cards, index cards, or paper sheets. Then sort the material according to the main divisions and subdivisions in the outline.
2. In the first hand-written draft of the review, insert the references throughout the article (separated by double horizontal lines) at the specific point to which each reference applies. Write each reference as a separate line and use no numbers. Rearrange the pages, assembling the topics under the proper headings and sub-headings and being careful to move the references with the discussion.
3. Have two copies of this draft typed double-spaced. These two typed copies have the references still intermingled with the text but separated from the text by lines which run clear

across the paper. Corrections and revisions may now be made on these copies. Read the discussion given above concerning the writing of the review (section III, C and D). Rewrite and polish the article, retyping any pages with the interlined references.

It is a good idea to put the whole article away for a week and then reread it critically. Ask one of your friends to read it and to mark questionable places.

This is the stage at which you may do any last-minute literature work. References can be added easily now, and divisions and subdivisions of the text with the accompanying references can be rearranged.

If there are large numbers of changes and additions it is best to have the manuscript retyped, again making two copies.

4. The carbon copy from step 3 above is used to prepare the bibliography. The references are cut apart from the text with shears and the strips arranged alphabetically according to the authors' names (see III, H) and clipped or pasted to sheets of paper. Duplicate references are deleted. The alphabetized list is then numbered sequentially. This list is then retyped, making two copies and showing the proper number before each reference.
5. The proper reference numbers are now written in on the revised typed copy prepared in step 3. This copy still has the authors' names and references in the text; hence they are easily located by referring to the alphabetical list. Reference numbers are always placed in parentheses and on the same line as the text in *Chemical Reviews*. After inserting the reference numbers, cross out the references on this copy, and retype it with the reference numbers but without the references, again making two copies. The original of this, plus the retyped alphabetized reference list, should be sent to the Editor. The carbon copy and the original hand-written copy should be kept until the galley proofs of the article have been read. The proofs should be checked against this original copy to eliminate errors.
6. Before mailing the manuscript it should be read very carefully to make sure that perfect copy is being submitted. If a number of errors are found on one page, that page should be retyped. A clean, clear copy of text, formulas, and equations is needed by the printer.
7. *Chemical Reviews* is edited on a part-time basis and there are no full time employees to revise, rewrite, and completely retype manuscripts. The editors depend on the authors to furnish

perfect copy for the printers who are *not* chemists.

8. The manuscript should be placed between two sheets of cardboard and inserted in a strong manila envelope for mailing. Thick manuscripts (100–300 pp.) are best placed in a cardboard box and wrapped securely.

VII. CORRESPONDENCE

All correspondence, outlines of proposed reviews, and manuscripts should be sent by first-class mail to the Editor:

DR. RALPH L. SHRINER, *Editor*
 Department of Chemistry
 Southern Methodist University
 Dallas, Texas 75222

DO NOT use "certified" or "registered" mail. An acknowledgment postcard is sent by the editor immediately upon receipt of a manuscript or outline.

When two or more authors collaborate in the preparation of a review, *only one* of these should carry out all correspondence with the editor, handle the galley proof, and order the reprints.

After an article has been accepted for publication, it is edited and prepared for the printers by the Senior Production Editor:

DR. CHARLES R. BERTSCH
Senior Production Editor
 Fundamental Journals Production Office
 20th and Northampton Sts.
 Easton, Pennsylvania 18043

VIII. PROOF

About two months before the article is to appear, galley proofs will be mailed to the senior author. If there are two or more authors, only one will serve as proof reader. The proofs should be read carefully and checked against the carbon copy of the manuscript. Corrections should be made according to the instructions sent with the proofs. Authors must be careful to limit changes to the correction of errors. They should *not* rewrite the material or add more material at this

stage. Even though articles pertinent to the review may have appeared since the mailing of the manuscript, the author is protected by the date of its submission and by the statement in the introduction to his review.

The corrected galley proofs should be mailed to Dr. Charles R. Bertsch *within three days*.

IX. REPRINTS

Twenty-five copies of the issue in which the article appears will be furnished to the senior contributor free of cost. Additional reprints may be ordered only at the time the galley proof is received. A table showing the cost of reprints with an order slip is sent to the senior author and must be returned along with the galley proof. Orders for more than 200 reprints are not accepted owing to the nature of the articles in *Chemical Reviews*.

X. BUSINESS AND SUBSCRIPTION INFORMATION

At present, there is no page charge to authors for articles in *Chemical Reviews*. To continue this practice it is important that readers and authors become regular subscribers to *Chemical Reviews*.

Chemical Reviews is published bimonthly beginning with February; 6 issues or 700 pp. per year constitute one volume. Subscription price to members of the American Chemical Society is \$10.00 per year; to nonmembers, \$20.00 per year. Postage to Canada and countries in the Pan-American Union is \$0.50; all other countries, \$1.25. Single copies are \$4.00 each plus \$0.15 postage to Canada and Pan-American Union; all other countries, \$0.20 per copy. Subscription orders should be sent to:

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Copies of these suggestions to authors of review articles may be obtained free from the editor, Ralph L. Shriner.