



THE JOURNAL OF NEMATOLOGY

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AUTHOR'S PUBLICATION HANDBOOK AND STYLE MANUAL

Society of Nematologists
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AUTHOR'S PUBLICATION HANDBOOK AND STYLE MANUAL

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FOREWORD

This *Author's Publication Handbook and Style Manual* is dedicated to the former Editors-in-Chief of the Journal of Nematology.

Seymour D. Van Gundy 1969-71

Grover C. Smart, Jr. 1972-74

Kenneth R. Barker 1975-77

Benjamin F. Lownsbery 1978-80

Joseph A. Veech 1981-83

Lorin R. Krusberg 1984-86

Robert D. Riggs 1987-90

David J. Chitwood 1991-93

Donald W. Dickson 1994-96

Many different people have contributed to the development of this *Author's Publication Handbook and Style Manual*. The information contained herein is an outgrowth of materials assembled by former Editors-in-Chief and former Technical Editor Kathy Leabo. The major impetus for the final product came from the Editorial Board of 1996 chaired by Editor-in-Chief D. W. Dickson, Senior Editor E. C. Bernard, and Editors M. Barbercheck, R. M. Giblin-Davis, B. C. Hyman, D. Kaplan, R. A. Kinloch, S. A. Lewis, J. P. Noe, G. R. Noel, and J. A. Thies.

The editors thank Kathy Leabo and Patricia McGhee for their technical editing of this style manual.

Cover figure provided by Zhongxiao Chen, University of Florida, Gainesville, Florida. Photographs were taken in the second year of an experiment on the biological control of peanut root-knot nematode *Meloidogyne arenaria* race 1, with an obligate, endospore-forming, bacterial parasite *Pasteuria penetrans*. Left: Peanut roots, pegs, and pods from microplots that were inoculated with 100,000 endospores of *P. penetrans* per gram of soil. Peanut roots, pegs, and pods had few galls. Right: Peanut roots, pegs, and

Pods from microplots without *P. penetrans*. Peanut roots, pegs, and pods were severely galled by *M. arenaria*.

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Society of Nematologists

The Society of Nematologists (SON), founded in 1961, is a nonprofit professional organization that serves the scientific needs of nematologists and individuals in related disciplines throughout the world. The Society holds regular meetings and promotes and extends knowledge in all phases of nematology. In 1969, the Society dedicated itself to publishing the *Journal of Nematology* (JON). *Annals of Applied Nematology* (AAN), a supplement to the *Journal of Nematology*, was first published in 1987. Original papers on basic, applied, descriptive, or experimental nematology are considered for publication. Other categories include the following: reviews (focus will be on current literature and work on a specific area of research, teaching, or extension); abstracts of papers presented at annual meetings; and research notes identical in format to full papers but not longer than four manuscript pages of copy (including abstract, text, literature cited, tables, and figures). Nonmembers of the Society of Nematologists may publish in the *Journal of Nematology*.

Copyright and Permissions

All material published by SON, except for papers prepared by U.S. and Canadian government employees, is copyrighted and protected under the U.S. copyright law. Under the Copyright Act of 1976, the term of copyright for materials registered by an organization is 75 years from the date first published. Before publishing any manuscript, SON requires the author to transfer full and complete ownership of any copyright to SON via a copyright transfer form.

The author warrants that the article is an original work not published elsewhere in whole or in part, except in abstract form, and that the author has full power to make this grant. If portions of the article have been published previously, then the author warrants that permission has been obtained from the copyright holder and the author will submit a copy of the permission release with this copyright transfer form.

The Society registers the copyright. Subsequent use of published materials requires written permission from SON. Requests for permission to reproduce published materials should state where and how the material will be used. Requests should be addressed to the Editor-in-Chief.

The Society shall claim no proprietary right other than copyright. Authors and coauthors retain the right to revise, adapt, modify, or otherwise use all or part of the article in future works of the author(s), such as press releases, lectures, and reviews, provided that all such use is for the personal noncommercial benefit of the author(s). All patent rights are retained by the author(s).

General Style Conventions and Checklist

Manuscript Preparation

Reviews: All manuscripts submitted to JON are critically reviewed before they are published. This assures readers of the highest professional quality of articles published in JON. Submission of manuscripts in correct technical form ensures that the scientific review process can proceed promptly and with a minimum of effort by JON editors. A well-composed manuscript requires much less editorial time, thus speeding up the manuscript review process. Acceptance of manuscripts depends on favorable reviews. Carefully prepared manuscripts are more likely to receive reviewer approval.

Sources of information: It is the responsibility of authors to submit papers that are clearly written, concise, and accurate. Consulting the "Information for Contributors" section at the end of each March issue of JON, following this style manual, studying recently published JON articles, and completing the checklist that follows are important steps all authors should take before they submit their manuscripts. This manual was developed to address specific style and format requirements for manuscripts submitted to JON. For abbreviations, terms, and guidelines not listed herein, consult the *CBE Scientific Style and Format Manual*, 6th ed. (1994), *American Society of Microbiologists Manual* (1991), *American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America Handbook* (1988), and *American Chemical Society Style Guide* (1986). Manuscripts that do not follow JON style and format procedures, and thus require extensive changes, **will be returned to the author(s) without being sent out for review**. It requires less time to compose a manuscript properly in the first place than to have editors insert numerous corrections throughout the manuscript.

Critical review before submission: Authors must have the manuscript critically reviewed by two colleagues whose names must be included in the letter of submission. Four copies (the original and three high-quality photocopies) should be sent to the Editor-in-Chief with the understanding that publication is to be exclusively in the Journal of Nematology. Papers will be reviewed by specialists in the field and edited by selected editors. Manuscripts intended for AAN must be received by the Editor-in-Chief on or before 15 April to ensure meeting the December publication deadline.

Research results submitted for publication should be reproducible. Results based on nonrepeated experiments are generally not suitable for publication in JON. Some research, such as nematocide and cultivar testing, however, does not have to be repeated to be published in AAN.

Taxonomic papers must follow the format on p. 42 in this manual (also printed in *Journal of Nematology* 21: 44-445).

Author's Checklist for Preparation of Papers

General

For manuscript preparation see "Information for Contributors" in March issue of JON, consult the most recent issue of the journal, and read the JON "Author's Publication Handbook and Style Manual" (available from the Editor-in-Chief or the SON web site (<http://ianrwww.unl.edu/ianr/plntpath/nematode/son/jon.htm>)). Authors are charged for each alteration made on page proofs that are not the result of a printer error.

- Manuscript was critically reviewed by two colleagues and their names are included in the letter of submission.
- Manuscript has at least 25 mm margins (1 inch) on all sides.
- Manuscript is *double-spaced throughout* including title page, literature cited, tables, footnotes, and figure legends.
- Type is standard elite or pica or manuscript is printed with a font and size yielding 10 to 14 characters per 25 mm and with a line spacing of no less than 3 per 25 mm.
- Left margin is justified, right margin is uneven (not justified).
- Line numbering is used.
- Words to be italicized are underlined or in italics if text is generated by a computer word processor. The two styles are not mixed. Bold type has *not* been used.
- Last name(s) of author(s) and page number appear in the upper right-hand corner of page 2 and all pages following, including figure legends and tables.
- Paper is assembled in the following order: Title page, Abstract, Text (Materials and Methods, Results, and Discussion), Literature Cited, Tables, Figure Legends, and Figures.

Title and authors

- First letters of each word and proper nouns in the title are capitalized.
- Title is no more than 100 characters including spaces.
- Authors and addresses are in journal style (first author, second author, etc.).
- Scientific names of plants and animals are given.

- State names are U.S. postal code abbreviations.
- Trade names of chemical or common names of nematodes are not given.
- E-mail address of the corresponding author is included, if available.
- Footnotes for current addresses, designation of the corresponding author with e-mail address, and required institutional statements are placed on title page.
- A running head of no more than 60 characters including spaces is suggested.

Abstract and key words

- Abstract follows title page with a page break separation.
- Abstract contains no more than 1,300 characters including spaces.
- Authorities for species are not cited in abstract.
- References and abbreviations are not used in abstract.
- Key words are informative, in alphabetical order, and include words appearing in title.

Text

- First-level headings (MATERIALS AND METHODS, RESULTS, DISCUSSION, LITERATURE CITED) or taxonomic names used as main headings) are all capitals and are centered.
- Second-level headings are underlined and indented. First letter of first word only is capitalized. Headings are followed by a colon (italicized), with text following immediately.
- Third-level headings are identical to second-level headings except followed by a period only.
- Citation of nomenclatural authorities for taxa is optional except for taxonomic papers. When cited, authors of all specific and infraspecific taxa except forma specialis are given, but only when first used in the text or in a table. If authors for taxa are cited in a table, they are not repeated in the text.
- All references cited in the text are listed in Literature Cited.

- All tables and figures are cited in the text and in the order in which they are numbered.
- Voucher specimens, cultures and molecular sequence data are deposited in appropriate collections and data banks.
- Taxonomy papers follow the format contained in *Journal of Nematology* 21: 444-445.

Literature cited

- The JON "*Author's Publication Handbook and Style Manual*" was used to determine proper style for citing journals, books, etc.
- All references were cited in text. Extra references were deleted.
- Journal titles are not abbreviated.
- All citations were verified against original sources especially accents, diacritical marks, and spellings in languages other than English. All German nouns are capitalized.
- References with multiple authors are in sequence alphabetically by author, not by date.
- Articles cited as 'In press' were accepted for publication and the name of the journal or publisher is included.
- In journal articles with more than one author, surnames and initials appear in the correct order (surname, initials, then initials and surname).
- In edited works, pages and editor(s) are cited in the correct position.
- For books, names of states or foreign countries are included. State names are abbreviated according to U.S. postal code.
- Citation format for AAN issued in 1987 and 1988 is *Annals of Applied Nematology* (*Journal of Nematology* 19 or 20, Supplement) 1:00-00 or 2:00-00. Beginning with the 1989 issue the citation format is *Supplement to the Journal of Nematology* (volume and page range).

Tables

- Each table starts on a separate sheet and is double-spaced throughout.
- Tables are numbered with arabic numerals.

- Table titles start with the indented word "Table" and number followed by a period. Title follows immediately on the same line with only the first letter of the first word capitalized (except proper nouns).
- Type size is the same, or nearly the same, as in text.
- Footnotes (indented) are indicated by a lower-case superscript letter^{a, b, c, etc.}.

Figure legends

- Legends begin on a separate page and are grouped in paragraphs according to figure arrangement. A separate page *is not* used for each group or plate.
- Legends are double-spaced.
- Legends are in paragraph form, indented, and begin with a statement for grouped figures.

Figures

- Plates do not exceed 23 x 30 cm (9 x 12 inches), including margins.
- Reviewers' copies are reduced to manuscript page size if originals are larger.
- Figures fit a maximum length of 21 cm (6.5 inches).
- Figures are grouped to fit the following widths:
 - a) 1 column = 68 mm; b) full page = 140 mm
- If several photographs or drawings are included, they are grouped into one or more plates.
- Photographs are at the finished size, or as close as possible. Cropping was indicated in the margins immediately adjacent to the image.
- Photographs and drawings are on separate plates.
- Photographs are mounted on illustration or copy paper with edges touching, not overlapping. They lie flat without bubbles, dents, or mars. White rules between photos are to be added by the printer. Color plates must be mounted on flexible backing or unmounted.
- A top and bottom margin of about 25 mm is present on each plate.

- Figures are numbered consecutively, e.g., Figs. 1A,B,C; 2,3, etc. or Figs. 1-3.
- A plate of drawings is either one figure with consecutive letters for each drawing or several figures with each drawing numbered consecutively.
- Symbols, numbers and letters are press-on, printed graphics, or made with a lettering instrument. Hand-written or typed symbols are *not* used. Transfer letters are preferred over Kroy type.
- Size of symbols and numbers is nearly the same as in the printed text or is adequate to permit reduction or enlargement indicated.
- Magnifications are indicated by scale bars on figures *or* reduction or enlargement has been taken into account when calculating magnifications for figure legends.
- A protective coversheet was attached to each plate.
- Figures and plates are labeled on the top front right-hand margin in black ink as follows: first author surname, Fig. number(s), reduction (% or final size = 1 col. or 2 col.).
- Drawings are being submitted either as the original or as a photostat (*not* photocopy) reduced to journal size.
- Graphs will usually be reduced to one column. This reduction has been taken into account in labeling graphs.

What to submit

- This checklist with completed items marked.

First submission for review (mailed to the Editor-in-Chief):

- Four copies of text, originals figures plus three good photographic copies (photocopies prepared by a laser color photocopier preferred). Reduce figure copies to manuscript page size if originals exceed that size. Originals are retained in the editorial office by the Editor-in-Chief.

Revised submission after review:

- Two copies of text plus originals of revised figures, if any. Original figures retained by the Editor-in-Chief will be used if no revisions are required.

After preparing the manuscript, reread the “Information for Contributors” and this manual to make sure that everything is correct and nothing was omitted. This checklist covers technical errors frequently noticed by the JON editorial staff.

General Information for Contributors

Manuscript Submission and Handling

Submission of a manuscript to JON implies nonsubmission elsewhere and (if accepted) no publication elsewhere in the same form without consent of the JON Editorial Board. Send the original manuscript and three photocopies to the Editor-in-Chief of the Journal of Nematology. The original copy is sent to an editor, who is charged with editing the manuscript, two copies are mailed out for peer reviews, and the fourth copy is retained in the office of the Editor-in-Chief. A cover letter should include the names of two colleagues who have reviewed the manuscript and state whether the article is intended for JON or AAN. Authors are encouraged to suggest individuals to review a manuscript, and they may request that certain individuals not review a manuscript (state reason for the request in cover letter). Authors who submit manuscripts containing complex statistical analyses are urged to state whether the statistical design and analysis were reviewed by a statistician.

Style Manual

This style manual, the *CBE Scientific Style and Format Manual, 6th ed.* and *Webster's Third New International Dictionary* should be consulted for form, style, and spelling. All manuscripts shall be written in English. Use SI (Système International) units of measurement.

Editorial Board and Associate Editors

The Journal of Nematology is administered by an editorial board composed of an Editor-in-Chief (EIC) and 10 Editors. The EIC is appointed by the Society of Nematologists Executive Board and serves 1 year as Senior Editor and 3 years as EIC. The EIC nominates Editors to serve 3-year terms and Associate Editors to serve 2-year terms to the Executive Board. One editor is appointed to serve as editor for AAN. The EIC serves as chair of the Editorial Board, is responsible for editorial policy and coordination of all SON publications. The Editorial Board is concerned with policy coordination of SON publications. The EIC serves as a member of the SON Executive Committee, reports to the Executive Board, prepares an annual report for the society describing the Journal's status, makes recommendations for changes, and publishes minutes of the annual Editorial Board meeting. Editors are responsible for reviewing and accepting manuscripts submitted for publication and for recommending changes in editorial style and policies regarding the Journal. Associate editors are responsible for evaluating in a timely manner the technical and intellectual content and suitability of manuscripts assigned to them.

The primary responsibility of the Editorial Board is the overall quality and

intellectual content of JON. The Editorial Board strives to ensure that articles are clearly written, unambiguous, readily readable, and contain sound science of high quality.

Review of Manuscripts

All manuscripts submitted to JON are reviewed by at least two reviewers and a designated editor, who make sure that the manuscript satisfies the following questions:

1. Is the information new and significant? Is the work original?
2. Were the experiments well planned? Were adequate experimental techniques used?
3. Is the discussion relevant, and are the conclusions justified by the data?
4. Is the writing clear and concise, and the organization appropriate?
Are there sections that should be expanded, condensed, or deleted?
5. Is there demonstration of reproducibility?
6. Are all the tables and figures properly prepared, not too complex, and necessary?
7. Are the photographs of high quality and properly labeled? Do they materially aid the text?
8. Are the form and style of the manuscript proper for the Journal?
Are the literature citations presented correctly and are all of them cited in the text?

Reviewers are given 3 to 4 weeks to review manuscripts before returning them to the designated editor along with their recommendation. The designated editor marks up the Editor's copy of the manuscript for revision by the author, and returns all documentation and instructions to the author. Authors have 4 months to make the revisions and return manuscripts to the designated editor. A manuscript returned after 4 months will be considered as a new submission.

Page Charge

Because it is impossible to meet the demand for journal space without financial assistance, the Society of Nematologists requires a page charge from members and nonmembers to offset the cost of publishing manuscripts. Authors are billed after their manuscripts are published.

Offprints

No free copies are provided. A quotation and an order form for offprints will be sent with the page proofs. If copies are ordered after the publication date, the article must be reprinted and a price quotation must be obtained from the printer.

Order of Manuscript Sections

Page one: Title page (omit page number). Page 2: Abstract page (start using page numbers placed on the upper right-hand corner of each page), include key words. Page 3: Introduction (do not use the word "introduction" to begin the section) followed by MATERIALS AND METHODS, RESULTS, DISCUSSION, LITERATURE CITED, TABLES, LEGENDS FOR FIGURES (a consecutive listing of the legends for each figure given in paragraph format), and the figure(s).

Title Page

Double space everything. Include the title, name(s) of author(s), a line over the notation "Received for publication," footnote(s) with author titles and institutional affiliation(s), first author's current address (if not the same), e-mail address, acknowledgments (if any), and a condensed running head of no more than 60 characters including spaces (including author(s) last name (s) or "et al." in italics). The title should use strong key words and be brief, preferably not more than 100 characters including spaces. Use scientific, not common, names for organisms. When scientific names are used in the title, do not include the authorities (except in taxonomic papers). Include corresponding author's name, address, phone and fax numbers, and e-mail address at the top of the title page.

A sample title page follows. Not all items will be on every title page, of course. Pay attention to proper indentation, underlining, spacing, and punctuation. Latin binomials or trinomials of organisms, not common names, are appropriate for the title of articles in JON.

Sample Title Page

Contact author's (corresponding author) name, address, phone no., fax no., and e-mail address (place in upper left-hand corner, single spaced).

Title of the Article Is Fewer than 100 Characters Including Spaces and

Appears Here¹ (**Do not bold title**)

U. R. Author,² I. M. Editor,³ and Y. B. Befuddled³

(Note: place commas before the superscript footnote number).

_____ (Insert line.)

Received for publication Month 19 . Leave space for day, month, and year to be filled in by the Editor-in-Chief; do not underline space.

¹Supported in part by a grant from....., A portion of a Ph.D. dissertation by the first author, Cooperative investigation by....., Scientific article number xxxx, Contribution number xxxx of the Nematode Research Institution. Mention of a trade name, warranty, proprietary product, or vendor does not constitute an endorsement of a product and does not imply its approval to the exclusion of other products or vendors that may also be suitable. (*A shorter disclaimer, or none at all, is encouraged*)

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(Note: authors are encouraged to present their academic or professional titles.

The authors thank whomever for whatever. *Do not use the word "acknowledgment."*)

E-mail: Contact author's e-mail address, e.g., nemas@gnv.ufl.edu (*lower case letters*)
Running Head: Condensed Title:Author or Condensed Title:Author, Author (or Author et al). (*Running head is limited to 60 characters including spaces and name[s] of author[s].*)

Page Two (Abstract Page)

Abstract: The abstract page, which is page 2 of the manuscript, includes the abstract and list of key words and begins with indented subheading Abstract:. Note that the colon also is underlined, like all colons in all JON subheadings. The abstract, which serves as the summary and is written in past tense, is one paragraph (no more than 1,300 characters including spaces) and is separate from the title page and the body of the text. It should be self-explanatory and intelligible in itself and include the following: rationale for the study; objectives and topics covered; brief description of methods; results; and conclusions. Do not include authorities for Latin binomials or trinomials, footnotes, statistical probability levels, or literature references.

Key words: An alphabetical list of key words, beginning with the indented subheading Key words: consists of single words (preferably) or short terms (two or three

words) including words from the title, that would be useful in index retrieval systems. Most key words should be in the singular forms. "Nematode" should nearly always be included as a key word. Include both the binomial and common name of nematodes and hosts, common names of pesticides, experimental techniques (e.g., electron microscopy, modeling, electrophoresis), specific subjects (e.g., soil temperature, suppression, etc.), and the general subject areas that follows.

List of key words that should appear in the key words list.

behavior	nematode	physiology
biochemistry	etiology	plant disease loss
biological control	genetics	regulatory
cell biology	host-parasite relationship	resistance
cytology	interaction	systematics
detection	management	taxonomy
diagnosis	method	technique
ecology	molecular nematology	ultrastructure
entomopathogen	morphology	

Text Body and Subheadings

First-level heading: Capital plus small capital, centered. (All capital letters in typed ms.) The organization of the manuscript body should be as follows: introduction (do not use the word "introduction"), MATERIALS AND METHODS, RESULTS, DISCUSSION, LITERATURE CITED, followed by the tables and Legends for Figures and the figures. These major subheadings of the manuscript are capitalized and centered on the page. The LITERATURE CITED and Legends for Figures sections each begin on a separate page.

MATERIALS AND METHODS includes general techniques and methods. RESULTS includes a brief description of experiments and trials. Do not include footnotes in the RESULTS section. DISCUSSION includes a synopsis of the importance of the results, telling why they are important, what objectives were met, and relating the results to those already reported in the literature. Table and figure numbers should not be mentioned in the discussion section.

Second-level heading: Capital letter, lowercase italic indented followed by a colon (Text follows on same line.) Note that the colon is also underlined. Avoid long subheadings; the best ones are less than one line when printed in JON. Names of species in subheadings do not receive an extra underline, nor is the underline removed. For the style of subheadings for taxonomic papers see Suggested Format for Taxonomic Papers on p. 42 in

this manual.

Third-level heading: Identical to second-level headings except followed by a period only.

Literature Cited

Authors are responsible for the correctness of all references cited in their articles. Use the name-year system, e.g., Short and Hopper, 1996; Mann et al., 1987. Cite only articles readily available through libraries; otherwise cite parenthetically within the text body. This includes work that is in preparation or "submitted." Articles that have been accepted by a publication may be cited as "in press."

List references (double spaced) on a separate page alphabetically by authors' surnames. Alphabetical order is determined by the first author's surname (family name) and then, if necessary, by surnames of succeeding coauthors. When the author name(s) is (are) completely identical in two or more references, these references are sequenced by publication date (earliest to latest), and if necessary, by the page numbers of articles published in the same journal. When citing multiple articles by the same author, list articles by one author before those by several authors. When author(s) is (are) the same for articles published in the same year use "1987a," "1987b," etc.

Underline or italicize Latin binomials (underlined preferred). Each citation should be checked against the original publication to verify author's name, year, title, journal name (or publisher's name and location), volume number, and inclusive paging. Journal names must be spelled out in full. The citation format for the AAN published in 1987 and 1988 is *Annals of Applied Nematology* (*Journal of Nematology* 19 or 20, Supplement) 1:00-00 or 2:00-00. Beginning with the 1989 issue the citation format is Supplement to the *Journal of Nematology* (volumn and page range).

Authors must pay precise attention to spelling, spacing, capitalization, indentation, and format in their literature citations. Always space after periods following initials. Note that the sample of the literature citations in this manual are arranged in correct alphabetical order.

Do not use "et al." in literature citations. Omit "Inc." and "Ltd." after publisher name.

Spell out state names in full when they are in journal titles, but use U. S. postal abbreviations when states are included in places of publication. List only one city when identifying a publisher; e.g., "New York: Academic Press," not "New York and London: Academic Press."

In rare cases in which all issues of a journal begin with page 1, the following format may be required. *Journal Name* 34(4):78-93.

Proceedings: These citations end with "Pp. 11-17."

Never use "the" to begin a journal title; e.g., "Plant Journal."

Sample Literature Citations

Anonymous. 1945. Article title. Washington, DC: EPA Publications.

Jones, A. T. 1989. Article title: Use cap after colon, even if not in title found in original reference. Spell Out Journal Name Always 25:23-25.

Jones, A. T., T. C. Jones, and W. R. Knapp, eds. 1988. Book title: Cap after colon—lower case after dash. Place: Publisher. *Note capitalization and lack of reference to total pages.*)

Jones, A. T., and W. R. Knapp. 1976. Article title. Pp. 12-23. In I. Q. Jones and M. Zeus, eds. Book title with only the first letter of the first word capitalized, vol. 3, 2nd ed. Place: Publisher.

Jones, B. T. 1980. Article title. In P. L. Bond, ed. Title of larger work. Serial Publication 23:23-34.

Jones, B. T. 1987. Dissertation title. Ph.D. dissertation, University Name, Place. *(Note: May also be called a thesis)*

MacVeagh, F. A. 1990a. Article title. Journal Name, in press. *Used only for manuscripts actually accepted. Otherwise cite as [unpubl.] in body of text.*

MacVeagh, F. A. 1990b. Article title. Journal Name, in press. *Used only for manuscripts actually accepted. Otherwise cite as [unpubl.] in body of text.*

McDowell, R. I., Jr., F. R. Dewey III, and H.-T. Resh, Jr. 1985. Title. Publication and no., Name of Experiment Station, University (if needed), Place.

M'Veagh, G. T., Jr., R. R. Hewey, and J. T. Smith. 1987. Proceedings of the Second Conference on Home Planning; date; Place. Available from (if needed). Institution, Place. Pp. 3-12.

Smith, I. I. 1978. Title. Journal 2:8-23. (In Russian; English summary.)

Teller, I. A., and J. P. Apple. 1997. Title. Journal Name, in press.

Teller, A. P., and B. S. Green. Title. Journal Name 28:561 (Abstr.).

Tables

Properly prepared tables report numerical data in an organized manner. Each table should be self-explanatory without referring to the text. A properly prepared sample table appears on p. 22 in this manual.

Number (arabic) each table and place on a separate page with descriptive title at the top. Table dimensions should fit within the printed page size limitations. Table titles are in paragraph style, with the first line indented. Avoid inclusion of material in the table title or in column captions that would be more appropriate in footnotes.

A double line is placed beneath the heading of a table; single lines separate table subheadings from each other, subheadings from the body of the table, and the body of the table from the footnotes. Do not use vertical lines.

Spell out second, minute, hour, day, week, month, year in titles and footnotes, but abbreviate in the body of a table.

The symbols *, **, and *** are reserved for statistical probability levels (do not use them as footnote symbols). These symbols may be used for probability levels without explanation.

Footnotes are used when their information will not fit into the logical structure of the table and the essential information is not readily available in the accompanying text. Superscript lowercase letters, e.g., ^{a,b,c}, are preferred signs directing readers to the footnotes of a table. The assignment of footnote letters to column headings is hierarchical (see CBE manual). The first line of each footnote is indented, and each footnote ends with a period.

Space between numbers and mean separation symbols, e.g., 1.2 ab.

Use commas with numbers larger than 999; e.g., 1,000 and 10,000, etc.

Genera should be spelled out in full at first mention in tables, or spelled out in a footnote if they must be abbreviated in the table.

Tables must be cited in numerical order. Examples for table citations in text: Table 1; Tables 1,3,4; Tables 1-3.

Sample Table

Table 1. Use this format as a guide when preparing a table for JON. Table contents should be self-explanatory. Everything should be double spaced. Use small case superscript letters for signs to footnotes.

Spanner head applicable to all columns				
Subheading		Subheading		
Heading (treatment) ^a	Column head	Column head	Column head	Column head
			Independent line (At planting) ^b	
Main entry line				
Subentry line (Cv.1)	no. a	no. abc	no. a	no. b
Cv. 2	no. ab	no. b	no. a	no. a
Cv. 3	— ^c	no. b	no. a	no. d
Cv. 4	no. b	no. b	no. a	no. d
			Independent line (45 days after planting) ^d	
Main entry line				
Subentry line (PI 1)	no. a	no. ab	no. b	no. ab
PI 2	no. a	no. a	no. a	no. b

Data are means of six replicates. Means within a row followed by a common letter are not different according to Duncan's multiple-range test ($P \leq 0.05$).

^aStatement about treatments.

^bStatement about at planting.

^cValue missing.

^dStatement about 45 days after planting.

Figures

In planning large illustrations, remember that both illustration and legend must fit within the printed page dimensions: 140 mm wide x 213 mm deep. Submission of any illustration larger than 230 mm x 300 mm is discouraged because excessive size gains nothing in printing quality and may result in figures damaged in the mail. Combine and mount several illustrations into composite plates whenever possible. Do not leave space between photographs in a composite. Do not send original illustrations of taxonomic papers until the revised copy is submitted, but provide a complete set of figures (photocopies produced on a laser color photocopier preferred) with each manuscript copy. Lettering on illustrations should be of high contrast and at least 1 mm high after final reduction. Identify each figure on the front top right-hand corner with author's name, figure number, and printed dimension desired. Number all figures consecutively, e.g., Figs. 1A,B,C; 2,3, etc. or Fig. 1A,B,C.

The original manuscript and figures will not be returned to the author unless requested.

Color illustrations and folded inserts can be printed only if the extra costs are paid by the author.

Number (arabic) all figure legends consecutively on a single page titled "Legends for Figures." For additional information, see Guidelines for Figure Preparation on p. 33 in this manual.

Use a paragraph style for all figure legends in the same plate; indent the first line.

Capitalization of letter designations must agree with the lettering on the figure; capital letters are preferred. Genera should be spelled out at first mention in figure legends.

Examples of figure legends: Fig. 1. Written text. A,B) Written text. C-F) Written text. Figs. 1-9. Written text. 2) Written text. 3) Written text. 4) Written text. 5,6) Written text. 7-9) Written text.

Examples of figure citations in text: (Figs. 1A-C; 2A,B; Fig. 1A-C.).

Basic Technical Style

Abbreviations: It is preferred that authors minimize the use of abbreviations because they make comprehension difficult for readers; however, the coining of abbreviations by authors is permissible. Spell out first time used and place abbreviation in parentheses. Use the abbreviation after that. For example: second-stage juvenile (J2)*Meloidogyne arenaria* race 1(Mal), soybean cyst nematode (SCN), monoclonal antibody (MBa), etc.

Rules for abbreviation and listings of accepted abbreviations are presented in the *CBE Scientific Style and Format Manual, 6th ed*(1994), and *ASM Manual*(1991).

The following abbreviations are acceptable in JON and may be used without any explanation.

abstr.	abstract	no.	number
a.i.	active ingredient	o.d.	outside diameter
a.m.	ante meridiem	Pf	final nematode density
CFU	colony forming unit	Pi	preplant nematode density
cv.	cultivar	Pm	midseason nematode density
diam.	diameter	PI	plant introduction
ed.	edition	p.m.	post meridiem
Eq.	equation	publ.	publication
Fig.	figure	Rf	reproductive factor
<i>g</i>	set in italics, gravity	UV	ultraviolet
i.d.	inside diameter	vol.	volume
kb	kilobase	vs.	versus

See p. 30 for statistical abbreviations.

The following abbreviations are not italicized: i.e. (that is), e.g. (for example), cf. (to compare), et al. (and others), ca. (circa, approximately, used only with numbers; e.g., ca. 1950).

When plural, capitalized abbreviations and years do not take an apostrophe: 1950s, PCBs, DNAs, etc.

American vs. British spellings: Preferred spellings are according to *Webster's Third New International Dictionary*. Use American English and spellings except for titles in literature citations.

Biological nomenclature: Authors should follow the *International Code of Zoological*

Nomenclature (1985) in naming organisms; each should be identified by genus, species, authority (if applicable), cultivar or varietal names (in single quotes), breeds, races, and accession numbers. Complete authorities and dates are required in taxonomic papers. All taxa (binomials and trinomials) should be underlined or italicized and fully spelled out the first time they are used in text, figure captions, and table titles. When new names of nematodes are introduced, the recommendations of the *International Code of Zoological Nomenclature* (1985) should be strictly applied, especially regarding type designation and statements indicating where such type material is deposited.

Provide authorities only for primary host, nematode, and pathogen.

Chromosome numbers: FN, n, 2n, 2x, 3x (x is not a times sign; underline to indicate italics.)

Country and state abbreviations: In the text spell out states, territories, and United States possessions when they stand alone. Spell out United States, unless it is used as an adjective, in which case U.S. is used (e.g., U.S. quarantine policy). USA is rarely used. Spell out states (except in footnotes and literature citations, and in parentheses). Use U.S. postal abbreviations for states inside parentheses. Use state abbreviations in literature citations except in Journal titles.

Crop terminology: Common crop names should not end in the letter "s"; e.g., "oat" (not "oats"), "peanut," "soybean," "tomato," "potato." Plural form is appropriate for the seeds of each crop; e.g., "soybeans," "peanuts," "oats."

Cultivars (varieties): No quotation marks necessary if preceded with "cultivar" or "cv.;" e.g., soybean cv. Kirby, or ...the soybean cultivars were Forrest, Pickett, and Hartwig. Use single quotation marks when cultivar name immediately follows the botanical name; e.g., *Arachis hypogaea* 'Florunner'. (Note: commas and periods are always outside single quotes around cultivar names; e.g., 'Forrest', 'Pickett', and 'Hartwig'.)

Dates: 1992-96, June 1996, 15 June 1996.

Degrees, institutions: Ph.D., M.A., M.S., M.Sc., A&M, P.O., USEPA, USDA ARS (no hyphen or comma).

Enumeration: In the text use (i), (ii), (iii), (iv), etc. to enumerate any series.

Figure and table references in text: "Figure 1" begins a sentence or is used outside parentheses in any sentence. "Fig. 1" begins a legend on the Legends for Figures listing and is also used inside parentheses in the body of the text. Subfigures should be labeled A,B,C, etc. (i.e., capital letters). For example: (Figs. 1,2) (Figs. 1-4) (Fig. 1A,B) (Fig. 1A-C) (Figs. 1A,B; 2A). (Note use of "s" for plural form of figure and spacing)

“Table” is always spelled out in full (Tables 1,2; Tables 1,3,4; Tables 1-4).

Genetic nomenclature: Authors naming strains, genes, alleles, loci identified as DNA polymorphisms, and molecular clones should follow the guidelines specified in Journal of Nematology 26: 138-143. For questions concerning genetic nomenclature standardization contact David McK. Bird (E-mail: david_bird@ncsu.edu).

Geography: 39°N, 32°14'36"E, N, S, E, W, NW, ESE.

Hyphens: Used with compound adjective forms that includes a number, including when the adjective is an abbreviated unit of measure:

2.5-cm-diam. core	5 to 10-cm deep	2-week-old seedlings
9 x 16-cm plastic pots	250-ml bottle	60-kg mass

Used with a compound adjective appearing before the word it modifies:

egg-mass culture	root-knot nematode
plant-parasitic nematode	second-stage juvenile

(Use lowercase letters after hyphens, except when word after the hyphen is a proper noun)

Other hyphenated words: degree-day, giant-cell

Latin phrases not italicized: in vivo, in vitro, sensu, per se, in situ

Light intensity units: $\mu\text{mol}\cdot\text{s}^{-1}\cdot\text{m}^{-2}$ or $\mu\text{E}\cdot\text{s}^{-1}\cdot\text{m}^{-2}$ (Note: JON and CBE style is to use “bullets” to indicate multiplication in units of measure)

Magnification: $\times 200$ (Note spacing and that precedes magnification value; use the multiplication symbol, not the letter x.)

Miscellaneous: “As described previously” implies that the method (or whatever) was described in a previous paper and is usually accompanied by a literature citation.

“Which” and “that” are often used incorrectly. *That* should be used as the relative pronoun introducing a restrictive clause and *which* to introduce a nonrestrictive clause, usually preceded by a comma (e.g., This is the nematode that I found yesterday. This nematode, which I found yesterday, has not been identified.)

“Compared to” is used to show similarity. For example, “You can compare my copy to the original.” “Compared with” is used to show difference and similarity. For example, “His work cannot compare with mine.”

“Because of” vs. “due to”— Do not use “due to” as a preposition meaning “because”. For example, “The experiment was a failure because of too much rain.” “Due to” is acceptable as an adjective. For example, “The nematologist’s failure was due to carelessness.”

“Use” vs. “utilize”— These words are often used synonymously, but in most cases, “use” is more appropriate.

“Was” and “were”— a total was, a pair was, data were, either was.

“Tests also were performed”— *Not* “Tests were also performed.”

“Was included only”— *Not* “Was only included.”

Tris buffer; petri dish has a lower case “p”; pipet (not pipette); Parafilm; Gram stain; gram positive; gram negative.

Molecular weight and daltons: The molecular weight of protein A is 74,000 (not 74,000 Da) or the molecular mass of protein A is 74,000 Da. The term “molecular weight” is considered a synonym for “relative molecular mass,” which is unitless.

Nematicides: Use approved common (generic) names when available; otherwise use capitalized trade names followed by their ingredients. Nematicide doses should be reported as amount of active or technical material per unit area, volume, or weight (e.g., 10 ml a.i./1,000 m², 10 µg a.i./ml, or 10 mg a.i./kg). The chemical formulation should be given and method of application clearly stated.

Nematode common names: Authors using common names for plant-parasitic nematodes should use those proposed in the Nematology Newsletter 33:23 (September 1987). An updated list of common names appears on pp. 37-41 of this manual.

Nematological phrases and terminology: Nematode disease names should not include the redundant word “disease.” For example, “red ring disease” should be “red ring of palm”; “pine wilt disease” should be “pine wilt”.

“Adult male,” “adult female,” “female cyst” are redundant. Use “male,” “female,” “cyst.”

“Juvenile” is the preferred word choice. Do not use “larva(e)” for a nematode developmental stage, with the exception of “dauer larva(e).”

“Centrifugal flotation” is the preferred phrase for the soil extraction method commonly used for nematodes.

Use “untreated,” not “nontreated”; “uninoculated,” not “noninoculated”; “uninfected,” not “noninfected.”

Do not use “mesh.” “A sieve with 850 μ m pore openings,” or “850 μ m-pore sieve” is acceptable.

“*M. incognita* eggs” or “eggs of *M. incognita*”; either phrase is acceptable.

Use “extraction from soil,” not “recovery.”

Use “at-plant application” or “applied at planting.”

Use “egg mass,” not “eggmass.”

Do not use “pest” when referring to plant-parasitic nematodes. Use parasite or pathogen.

Nested parentheses: Generally use ([]), but use (()) for taxonomic authorities.

Numbers: Spell out numbers under 10, except when used with units of measure, and use numerals for 10 and above; e.g., two plants, 10 plants, six replicates, 4 ha, 10 days, twofold, 10-fold. Exceptions to this rule include numbers at the beginning of a sentence, which are always spelled out, and series containing both one-digit and two-digit numbers, which are always numerals. If a number is spelled out, its unit of measure should also be spelled out.

Use % with numbers and “percentage” without numbers; e.g., “13%,” but “a smaller percentage.” Use “between 3% and 5%” and “from 3% to 5%.” Hyphens used for other ranges should be kept to a minimum. *Note: A range of percentages is expressed with the % symbol following each value to eliminate any ambiguity as to whether the first number represents simply a number or a percentage; also, note closed-up space between the number and % symbol).*

“Fifteen percent” at beginning of sentences. For example, “Fifteen percent of the samples were contaminated.” *Note the plural verb “were”; the subject of the sentence is not singular “percent” but the implied “15 of 100 samples.” “Fifteen percent was contaminated” is correct when “of the samples” is not included.*

Use commas in numbers of four digits or more.

Do not use the symbol # as an abbreviation for number; abbreviate “no.” in tables or figures, or in rare instances in text.

The words “number,” “total,” numerical quantities, and fractions take either singular or

plural verbs according to their meaning. For example, "The number of complaints has been increasing" vs. "A number of changes have been made."

Generally when discussing quantities in technical writing, it is correct to use "more than" rather than "over" and "fewer than" rather than "less" or "under." For example, "A total of more than 16 species was isolated." *Note when discussing liquids or gases this does not apply.*)

Use 34.2 ± 0.3 , not $34.2(\pm 0.3)$. When numbers are less than one, a zero must precede the decimal mark; e.g., 0.3, not .3.

Operator signs and spacing: = word, = 2, < 12, + 1 SE, \pm 400.

Proprietary materials and apparatuses: Follow the proprietary name with the manufacturer's name and address in parentheses (city and state or city and country if outside the United States), e.g., Gandy (Gandy, Memphis, TN). List nematicides and other pesticides by their approved common or generic names. Use the chemical name if a common name is not available. Do not use trademark symbols.

Quotation marks: Commas and periods go inside quotation marks, except for the names of cultivars, in which case any comma or period would always be outside single quotations. For example: ", " .” Lycopersicon esculentum ‘Rutgers’.

Ranges: Use the connecting word "to" rather than a hyphen; e.g., 21 to 28°C. If the range is given in parenthesis or in a table, use a short dash.

References in text: Use "et al." for three or more authors cited in the text. *Note that all authors' names are included in Literature Cited listing.*

Reference citations in text by name-year system, e.g., (Smith, 1993; Jones, 1995). If two authors, use both names, e.g., (Smith and Jones, 1995). If three or more authors use et al., e.g., (Dixon et al., 1995). For two or more articles by the same author(s) in the same year, use lower case letters, e.g., (Houser, 1992a, 1992b). Acceptable abbreviations and style: (Smith, pers. comm.), (pers. obs.), (unpubl.), (unpubl. data).

Restriction endonucleases: Eco RI, Bam I, Hind III, Sau 3A. *Note spacing and lack of italicization.*)

Single words: cheesecloth, germplasm, preemergence, postemergence, preincubated, pretreated, midsummer, nonspecific, nonparasitic. *Note the prefix non- should not be hyphenated when combined with most words.*)

Soil identification and types: All soils should be identified according to the U.S. soil

taxonomic system the first time each soil is mentioned. It is preferred to give the series name in addition to the family name. See *National Soil Taxonomy Handbook* (U.S. Department of Agriculture, 1982-1986) and *Keys to Soil Taxonomy* (Soil Management Support Services, 1985).

Soil particle size analysis was 92% sand, 4% silt, 4% clay, <1% organic matter; pH 6.8. The percentage of sand, silt, and clay must equal 100. (*Note semicolons.*)

Solidus (slash or diagonal): The main use of the solidus “/” is as a symbol for the mathematical operation of division. Do not use as a substitute for the comma, hyphen, or full expression. Use “per” without numbers-numerals (e.g., “a few eggs per gram”) and “/” with numerals (e.g., 0.18 kg/ha). Do not use with “and/or.” The form “and(or)” is acceptable, but undesirable, and can be avoided by rephrasing the sentence.

Statistics: Do not cite a reference for commonly used experimental designs, such as completely randomized, randomized block, and split-plot designs, or simple procedures such as *t* tests. For little-used statistical methods, designs, or analyses cite an appropriate and accessible reference.

If computer software programs are used, they should be treated as proprietary material or apparatus. Give the manufacture or developer name with location parenthetically within the text body. This includes the SAS software. **Do not list SAS software manual in the Literature Cited section**

“Significant” or “not significant” seldom should be used. Instead, the achieved significance level for statistical tests (e.g., $P \leq 0.05$, $P \leq 0.01$, $P \leq 0.001$; or $P > 0.05$, $P > 0.10$) should be given in parentheses after the comparison, generally at end of clause or end of sentence. (*Note spacing between P and or and the level.*)

The asterisk symbols *, **, and *** are used to show significance at $P \leq 0.05$, 0.01, and 0.001 probability levels, respectively. When used for probability levels, these symbols need not be explained with footnotes.

Student's *t* test, *U*-test, k-ratio, *F*-test, Duncan's multiple range test.

Some abbreviations commonly used in statistics. Those to be set in italics are underlined.

\bar{x}	Arithmetic mean	NS	Not significant
χ^2	Chi-square		Probability of type I error
r	Correlation coefficient	β	Probability of type II error
R^2	Coefficient of multiple determination	b	Regression coefficient
r^2	Coefficient of simple determination	n	Sample size
CV	Coefficient of variation	SE	Standard error of mean
df	Degrees of freedom	SD	Standard deviation of sample
LSD	Least significant difference	t	Student's t
R	Multiple correlation coeff.	s^2	Variance
		F	Variance ratio
		P	Probability

Taxonomic authorities: Do not underline the space between genus and species. When dealing with multiple names of taxonomic authorities, list them all; do not use et al.

The following are examples:

Pratylenchoides utahensis Baldwin, Luc & Bell, 1983 (*Use & [ampersand], no comma before &, no comma after year*)

Meloidogyne incognita (Kofoid & White) Chitwood race 1 (*No comma before race.*)

n. sp. n. gen. n. comb. (*No comma before any of these; note spacing*).

Lemon (Citrus limon (L.) Raf.) (*Parentheses remain parentheses when taxonomic authorities are parenthetical*)

Hoplolaimus galeatus (Cobb, 1913).

Check spelling and note lack of a hyphen for commonly used authority "Filipjev & Schuurmans Stekhoven."

Units of measure: Use SI units of measurements (see p. 45 of this manual). British or American units may be given in parenthesis following metric. The exception is that Celsius (°C) normally should be used instead of kelvin (K). See the current "Standard Metric Practice Guide" (*American Society for Testing Materials, 1916 Race Street, Philadelphia, PA 19103*).

Write out units that are not preceded by a number; e.g., The number of cysts per cubic

centimeter of soil increased with time.

Always spell out units of time in full in text, table titles, footnotes, and figure legends: second, minute, hour, day, week, month, year. No plural form for unit abbreviations, e.g., ml, not mls.

Do not abbreviate measurements in titles.

Log \underline{x} , $\log(\underline{x} + 1)$, $\log_{10} \underline{x}$ (*Note spacing*). In text "...data were transformed with $\log_{10}(\underline{x} + 1)$ before analysis," not "...data were log-transformed ($\log[\underline{x} + 1]$). "...data were transformed with $\arcsin(\sqrt{\underline{x}})$ before analysis," not "...arcsin transformed."

g (not gm), mg, kg, a.i., m, ml, μ l, mm, km, ha.

Liter is always spelled out, e.g., 3 liters, 1.2 g/liter, but 3 ml, 1.2 mg/ml.

Four milliliters at beginning of sentence and several milliliters if number is not specified (i.e., spelled out, not abbreviated). For example, "Twenty-five milliliters was added to the solution." (*Note: "was" not "were" because all 25 ml are dumped in at once and therefore considered as a single unit*)

37 °C (*Note the space between number and symbol for degree sign*). Do not use Fahrenheit except in parenthesis following C.

1,500g (gravitational units), g for gravity (italicized). (*Note lack of space between g and numeral*.)

[³H]leucine (no hyphen or space), sodium [¹⁴C]acetate.

16S (Svedberg unit for sedimentation coefficient); Hz, kHz, kVKm.

1,000, 10,000, 0.01; 0.1 M, 0.1 N.

1.3×10^{-4} (*Note spacing*)

Complex units of measurement: Preferred JON style for two units is to use a solidus ("/") to indicate division, e.g., $\mu\text{g}/\text{ml}$, not $\mu\text{g} \text{ ml}^{-1}$. When an expression has more than one unit in the denominator, only one solidus may be used to avoid ambiguity; e.g., $\text{kg}/(\text{m}^2 \text{ second})$ but not $\text{kg}/\text{m}^2/\text{second}$.

Italic type for variables: $y = ax + b$. Underline the variables \underline{x} and \underline{y} , not the constants a and b.

Guidelines for Figure Preparation

Proper use and construction of figures are essential to create informative manuscripts. Properly designed figures are more useful to the reader than any other part of a manuscript. Poorly constructed figures convey little informative content and detract from the manuscript's effectiveness. Because of the expense of figures and their disproportional contribution to the physical appearance of the Journal, editors scrutinize figures for necessity and content. Moreover, as computer software has facilitated the preparation of graphs by scientists, many editors believe the quality of graphs in printed publications has declined. Computer-generated figures should be indistinguishable from those prepared by a professional artist. For more information, consult Allen (1977), CBE Scientific Illustrations Committee (1988), *CBE Scientific Style and Format Manual, 6th ed* (1994), Kennedy and Kennedy (1990), and Seddigh and Jolliff (1988).

Size: A printed Journal page is 140 mm × 213 mm. When designing figures, authors should keep in mind whether full-page width or one-column width is desired and should indicate on the figure which is preferred. In general, line art (i.e., graphs and line drawings) can benefit from some reduction (by 33% from original size) in the printing process, because jagged computer-generated lines will be smoothed. Submission of same-size line art, however, has the benefit of eliminating uncertainties about loss of detail during reduction. If such uncertainties are not present, then oversize line art is preferred.

Photographic art usually loses detail when reduced-size halftones are produced; for this reason, photographs should be submitted nearly the same size as the width of a column or page. Authors concerned about detail being lost within a specific part of a figure should alert the editors and printer to this fact in a note attached to the figure. Figures exactly 140 mm wide should be less than 213 mm high in order to allow space for the figure legend, which will be printed on the same page as the figure.

Regardless of type of figure, none should not be larger than 230 × 300 mm (9 × 12 inches). Oversize figures are easily damaged and require special handling; if an author has difficulties with the figures, so will editors and the printer. Submitted figures should never be smaller than the final size desired.

Composite plates: Illustrations should be combined and mounted as composite plates whenever possible to cut down expense. Subfigures must be cut square and mounted square with respect to each other; author-artists should use appropriate equipment to check this. Also, square-cut subfigures should be immediately adjacent to each other; the printer will insert 1-mm white lines between them. Separation of subfigures by wide gutters attracts the reader's eye to the empty space between the subfigures instead of to the illustration. Similarly, in a figure containing several graphs or several separate line drawings, the individual subfigures should be mounted close together, because the space between them will appear to enlarge when the figure is reduced. Finally, figure layouts should be arranged to make sure that excessive white space will not occur on a journal page.

Copy quality: Original artwork should be sent with at least **four** copies of the submitted manuscripts whenever possible. However, the three reviewer copies of figures (even photographs) can be reproduced on laser color photocopiers. These are generally of excellent quality and adequate for the manuscript review process.

If a computer has been used to generate graphs, then direct, laser printer, high-quality output is required. Laser copies on coated paper are sharper than those printed on a dull-surfaced paper such as photocopier or bond paper. Special coated copy paper is a good choice for printing figures. Photocopies frequently contain dots of the toner that authors must cover up with typewriter correction fluid, but thick application of this can produce "scabies" that cause problems for the printer if they are too close to lines or letters. Dot matrix printout is unacceptable. Paper with strong watermarks can also create problems with unwanted shadows or zigzags in lines.

Stippling: Shading in bar graphs is desirable but should consist of solid black or line patterns because when finely stippled dots are reduced, they tend to either drop out entirely or coalesce into peculiar patterns. Densely stippled areas in bar graphs always coalesce upon reduction. If spaced too closely together, individual lines within the line patterns can have a similar problem. If actual size figures are submitted, the problem seldom appears, but at the expense of losing the benefits of reduction. Similar problems can occur with stippling in reduction of taxonomic illustrations.

Mounting: Because small, loose figures can be lost and because the Editor-in-Chief must attach labels to the bottoms of figures, figures should be mounted on 21.6 x 27.9 cm (8½ x 11 inch) sheets of paper or thin paperboard, with a 2 to 3-cm margin at the bottom. Color figures must be mounted on flexible backing because they must remain flexible for mounting on a cylinder during reproduction. Authors should be careful when mounting figures, as excess glue can cause figures to wrinkle. Although rolled figures ship easily in a mailing tube, this practice is discouraged. Transfer letters and attached subfigures can easily fall off rolled figures. Also, mailing rolled or oversized figures to the printer presents a problem for the Editor-in-Chief.

Do not allow metal paper clips to contact figures directly because of potential denting and rust damage or both. Similarly, excessive glue or fingerprint oil can attract dirt and create a shadow or reflection when reproduced. A mounted figure can be protected by a paper overlay.

Type specifications: Letters on figures should be computer generated or of the transfer type, not produced by a typewriter. Subfigures should be labeled with uppercase "A," "B," etc. In taxonomic papers, sequential numbering of figures within all plates is preferred to the use of subfigures; e.g., figures 1-13, not figure 1A-M. Labels on photographic figures must be within the photographic area, not at or outside the edges. Any figures not squared

precisely will be trimmed square by the printer, a process that can result in cutting off parts of labels positioned at the edges. After reduction, lettering should be at least 1 mm high, preferably 1.5 mm. Larger letters, however, can overwhelm the data contained within a figure and detract from the appearance. Because boldface letters can close up when reduced, use of bold type is discouraged. Authors should reduce illustrations in a photocopier to examine the effects of reduction on the art work.

For maximum visual appeal, the type style should be the same for all letters within a figure (except for italicized scientific names) and for all figures in the same manuscript. Editors recommend lowercase Helvetica (or similar sans-serif type style) for labeling graphs, with the first letter of each label capitalized. The Journal has no absolute policy on this, but authors should choose a type with care and avoid the unusual or trendy. The size should be no smaller than 12 point; in any event, it should be neatly proportional to the size of the figures.

Graphs: Graphs are used to present relational data characterized by a pronounced trend; tables should be used to report accurate numbers, report data with no trends, or present data with complex statistical comparisons. If practical, all graphs in the same manuscript should have the same size, format, scaling, and type style. Ideal graphs are slightly wider than they are high, but this rule should not be followed if lack of clarity results. Submission of slightly oversized graphs (e.g., 150% of final size) will smooth out some lines, provided the detail within individual lines and letters is sharp.

Labels in graphs should state clearly what was measured and in what units (and the units should be in parentheses at the end of the label). Preferred style for complex units is, e.g., mg/cm^2 and $\text{mg} \text{ cm}^{-2} \text{ h}^{-1}$, depending on whether two or three units are used. Ambiguity can result if units are specified as $\times 10^3$ or $\times 10^3$. Labels should be parallel to the axis, not perpendicular or slightly askew.

All four sides of a graph should form a square. All segments of all lines (including axes and tick marks) should be distinct, and error bars should be easily readable. Tick marks along the axes should be used and should describe real intervals instead of being merely decorative. Identify some (but not all) of the tick marks. The axes should not extend beyond the range of data points and should not be thicker than the data lines, which are the focal points of the graph and are ideally twice as wide as the axis lines. The finest lines in a graph should be the error bars. Excessively heavy lines and letters will become exaggerated in thickness when reduced and should be avoided. All lines must be uniformly black, and the corners of intersecting lines must be clean.

Graphs within the same figure should be labeled "A," "B," etc. Latin binomials should be underlined or italicized if the word-processing program allows for it. All letters and symbols should be distinct when the graph is printed at final size. Any symbol used within a graph to mark a data point should be one that is commonly typeset. Solid and hollow circles,

triangles, and squares are best. In addition, different styles of lines as well as different symbols should be used for identifying different groupings of data. If space permits, lines may be defined within the graph instead of the figure legend, but the graph should maintain an uncluttered appearance.

Identification: To minimize the possibility of misplacement, figures should be identified with the author's name, journal name (JON or AAN), manuscript number, figure number, and width desired. Unless paper boarded mounting has been used, do not place labels directly opposite the figure on the flip side; otherwise, the letters may bleed through during reproduction.

Magnification: Size bars should be added to figures to indicate magnification when they are appropriate, however figure size may change during reproduction. Numerical values of reproduction (e.g., $\times 100$) may change and therefore must not be used in figures or in figure legends.

Figure legends: Figure legends, with their figures, should stand alone, i.e., not require a reading of the manuscript to comprehend the figure. All abbreviations and symbols on a figure should be explained in the legend. Legends for figures should be printed on a separate sheet of paper, not on the same sheet of paper as the figure. Consult other sections of this manual as well as a recent issue of JON for more information on figure legends.

Proofreading: Authors should check all figures and figure legends for spelling, neatness, and adherence to the above guidelines. On occasion, manuscripts have been received with missing figures, or figures belonging to another manuscript.

Common Names for Plant-Parasitic Nematodes

Authors should use appropriate common names of all plant-parasitic nematodes mentioned in manuscripts published in JON (Bernard, 1987; Buhner, 1954; Maggenti, 1981). The following are rules for applying common names to plant-parasitic nematodes and a list of "officially" designated common names. Since many nematodes are polyphagous, geographically widespread, or have no symptomatic effects on plants, a rigid system is impossible to institute.

Common names should be applied only to those species that cause economic damage, can be seen easily, or have noticeable, specific symptoms. Thus *Helicotylenchus multicinctus* might merit a common name, whereas *H. dihystera* probably would not. All root-knot and cyst nematodes probably could be named, because they or their symptoms are distinctive.

Priority in providing a common name for a new species rests with the describer. Suggested sources for the common name could be geographic location for a species thought to have a restricted range (e.g., Columbia root-knot nematode for *M. chitwoodi*), host plant (citrus nematode for *T. semipenetrans*), morphological character (awl nematode for *Dolichodorus* spp.), specific symptom, or translation of the specific epithet.

Common names developed or proposed by the SON Ecology Committee should be published in the Nematology Newsletter for comment by the general SON membership. Names perceived as acceptable should be used in JON and NNL. The chair of the Ecology Committee is responsible for collecting newly proposed common names and sending them to the NNL editor for publication on a yearly basis.

With these rules in mind, members of the 1985-1986 ecology and extension committees were polled for common names familiar to them or used in their work. Following their input, common names were tabulated and listed. Suggestions for changes, additions, or deletions should be made to the current chair of the Ecology Committee.

Although some generic common names have little meaning or have only restricted application to a genus, long-standing use has legitimized them (e.g., stunt nematode for *Tylenchorhynchus* spp.). In general, common names should be applied only to genera that include economically important species. In the case of some species, several common names can be applied to reflect diversity in hosts or symptoms, and are so listed. Anyone interested in the history of a name should contact E. C. Bernard (E-mail: ebernard@utk.edu).

Where two names are listed, the first name should receive priority.

Anguina spp.: seed and leaf gall nematodes, seed-gall nematodes

A. agrostis(Steinbuch) Filipjev: bentgrass nematode

A. tritici(Steinbuch) Filipjev: wheat cockle nematode, wheat gall nematode

*Aphelenchoides*spp.: bud and leaf nematodes, foliar nematodes

*A. arachidis*Bos: testa nematode

*A. besseyi*Christie: rice white tip nematode, strawberry bud nematode, summer crimp nematode, summer dwarf nematode

A. fragariae(Ritzema Bos) Christie: spring crimp nematode, spring dwarf nematode, strawberry bud nematode

A. ritzemabosi(Schwartz) Steiner & Buhner: chrysanthemum nematode

*Belonolaimus*spp.: sting nematodes

*B. longicaudatus*Rau: sting nematode

Bursaphelenchus cocophilus(Cobb) Goodey: coconut palm nematode, red-ring nematode

Bursaphelenchus xylophilus(Steiner & Buhner) Nickle: pinewood nematode

*Cacopaurus pestis*Thorne: walnut nematode

*Cactodera*spp.: cyst nematodes

C. cacti(Filipjev & Schuurmans Stekhoven) Krall & Krall: cactus cyst nematode

C. weissii(Steiner) Krall & Krall: knotweed cyst nematode, smartweed cyst nematode

*Criconema*spp.: ring nematodes

*Criconemella*spp.: ring nematodes

C. ornata(Raski) Luc & Raski: peanut ring nematode

C. xenoplax(Raski) Luc & Raski: peach ring nematode

*Ditylenchus*spp.: stem and bulb nematodes

*D. destructor*Thorne: potato rot nematode

D. dipsaci(Künn) Filipjev: stem and bulb nematode, alfalfa stem nematode

*D. africanus*Wendt, Swart, Vrain & Webster: peanut pod nematode

*D. myceliophagus*Goodey: mushroom spawn nematode

*Dolichodoruss*spp.: awl nematodes

*D. heterocephalus*Cobb: awl nematode

*Globodera*spp.: round-cyst nematodes

G. pallida(Stone) Behrens: white potato cyst nematode

G. rostochiensis(Wollenweber) Behrens: golden nematode, golden potato cyst nematode

G. tabacum(Lownsbery & Lownsbery) Behrens: tobacco cyst nematode

G. virginiae(Miller & Gray) Behrens: horsetail cyst nematode

Gracilacusspp.: pin nematodes

Helicotylenchusspp.: spiral nematodes

H. dihystra(Cobb) Sher: spirral nematode

H. multicinctus(Cobb) Golden: banana spiral nematode, Cobb's spiral nematode

Hemicriconemoidesspp.: false-sheath nematodes, sheathoid nematode

Hemicycliophoraspp.: sheath nematodes

*H. arenaria*Raski: sheath nematode

Heteroderaspp.: cyst nematodes

*H. avenae*Wollenweber: cereal cyst nematode, oat cyst nematode

*H. betulae*Hirschmann & Riggs: birch cyst nematode

*H. carotae*Jones: carrot cyst nematode

*H. cruciferae*Franklin: cabbage cyst nematode

*H. cyperi*Golden, Rau & Cobb: nutgrass cyst nematode

*H. fici*Kirjanova: fig cyst nematode

*H. glycines*Ichinohe: soybean cyst nematode

*H. goettingiana*Liebscher: pea cyst nematode

*H. humuli*Filipjev: hop cyst nematode

*H. lespedezae*Golden & Cobb: lespedeza cyst nematode

*H. schachtii*Schmidt: sugarbeet cyst nematode

*H. trifolii*Goffart: clover cyst nematode

*H. zae*Koshy, Swarup & Sethi: corn cyst nematode

Hirschmanniella oryzae(van Breda de Haan) Luc & Goodey: rice root nematode

Hoplolaimusspp.: lance nematodes

H. galeatus(Cobb) Filipjev & Schuurmans Stekhoven: lance nematode

*H. columbus*Sher: Columbia lance nematode

Longidorusspp.: needle nematodes

Meloidoderaspp.: cystoid nematodes

*M. charis*Hopper: mesquite cystoid nematode

*M. floridensis*Chitwood, Hannon & Esser: pine cystoid nematode

Meloidogynespp.: root-knot nematodes

M. arenaria(Neal) Chitwood: peanut root-knot nematode

*M. camelliae*Golden: camellia root-knot nematode

*M. carolinesis*Eisenback: blueberry root-knot nematode

*M. chitwoodi*Golden, O'Bannon, Santo & Finley: Columbia root-knot nematode

*M. enterolobii*Yang & Eisenback: pacara earpod tree root-knot nematode

*M. exigua*Goeldi: coffee root-knot nematode

*M. graminicola*Golden & Birchfield: rice root-knot nematode

M. graminis(Sledge & Golden) Whitehead: grass root-knot nematode

*M. hispanica*Hirschmann: Seville root-knot nematode

M. hapla Chitwood: northern root-knot nematode
M. incognita (Kofoid & White) Chitwood: southern root-knot nematode
M. javanica (Treub) Chitwood: Javanese root-knot nematode
M. konaensis Eisenback, Bernard & Schmitt: Kona coffee root-knot nematode
M. lusitanica Abrantes & Santos: olive root-knot nematode
M. megatyloides Baldwin & Sasser: pine root-knot nematode
M. naasi Franklin: barley root-knot nematode
M. nataliei Golden, Ross & Bird: Michigan grape root-knot nematode
M. paranaensis Carneiro, Carneiro, Abrantes & Almeida: Paraná coffee root-knot nematode
M. partityla Kleynhans: pecan root-knot nematode
M. pini Eisenback, Yang & Hartman: sand pine root-knot nematode
M. platani Hirschmann: sycamore root-knot nematode
M. querciana Golden: oak root-knot nematode
M. suginamensis Toida & Yaegashi: Suginami root-knot nematode
M. thamesi Chitwood: Thames' root-knot nematode
M. trifoliophila Bernard & Eisenback: clover root-knot nematode

Merliniusspp.: stunt nematodes

Nacobbus spp.: false root-knot nematodes

N. aberrans (Thorne) Thorne & Allen: false root-knot nematode

Orrina phyllobia (Thorne) Brzeski: nightshade gall nematode

Paratrichodorusspp.: stubby-root nematodes

P. minor (Colbran) Siddiqi: stubby-root nematode

Paralongidorusspp.: needle nematodes

Paratylenchusspp.: pin nematodes

Pratylenchoidesspp.: false burrowing nematodes

Pratylenchusspp.: lesion nematodes

P. alleni Ferris: Allen's lesion nematode

P. brachyurus (Godfrey) Filipjev & Schuurmans Stekhoven: southern lesion nematode

P. coffeae (Zimmermann) Filipjev & Schuurmans Stekhoven: coffee lesion nematode

P. penetrans (Cobb) Filipjev & Schuurmans Stekhoven: northern lesion nematode

P. scribneri Steiner: Scribner's lesion nematode

P. thornei Sher & Allen: Thorne's lesion nematode

P. vulnus Allen & Jensen: boxwood lesion nematode, walnut lesion nematode

P. zae Graham: corn lesion nematode

Punctodera punctata (Thorne) Mulvey & Stone: grass cyst nematode

Radopholus spp.: burrowing nematodes

R. citrophilus Huettel, Dickson & Kaplan: burrowing nematode, citrus burrowing nematode

R. similis Cobb: banana burrowing nematode, burrowing nematode

Rotylenchulus spp.: reniform nematodes

R. reniformis Linford & Oliveira: reniform nematode

R. parvus (Williams) Sher: reniform nematode

Rotylenchus spp.: spiral nematodes

R. buxophilus Golden: boxwood spiral nematode

Scutellonemas spp.: spiral nematodes

S. bradys (Steiner & Lehw) Andr ssy: yam spiral nematode

Subanguina radicola (Greeff) Paramonov: grass root-gall nematode

Trichodorus spp.: stubby-root nematodes

Tylenchorhynchus spp.: stunt nematodes

T. claytoni Steiner: tobacco stunt nematode

Tylenchulus semipenetrans Cobb: citrus nematode

Xiphinema spp.: dagger nematodes

X. americanum Cobb: American dagger nematode

X. chambersi Thorne: Chambers' dagger nematode

Format for Taxonomic Papers
(Reprinted from Journal of Nematology 21: 444-445.)

Taxonomic papers often show a wide diversity in style and format when published. This is due in part to the nature of the organisms, but more so to the absence of specific guidelines for preparation and publication of such papers. Currently, authors, reviewers, and editors face many problems and frustrations because of the lack of a taxonomic guide or format. Consequently, the Systematics Resources Committee of the Society of Nematologists (Golden et al., 1989) was asked to develop a format to serve as a guide in preparing and publishing taxonomic papers. This presentation should be useful to that end.

The Rank 1 subheading SYSTEMATICS (Table 1) is required for revisions and taxonomic papers containing other studies of equal rank, e.g., phylogeny, morphology, cytogenetics.

Rank 4 subheadings, which identify the specimens described, generally are followed by measurements (or table reference to measurements) that lead into a paragraph or paragraphs of description. The subheading *Measurements* is not used in this format.

It is strongly recommended that measurements include range, mean and standard deviation (SD). Measurement abbreviations (μm , mm) may or may not be included in the description; but, if omitted, the following statement *must* be added at the end of MATERIALS AND METHODS: "All measurements are in micrometers (μm) unless otherwise specified." In addition, when data are presented in tabular form, measurement abbreviations should be specified in or at the end of the title of each table or shown in an appropriate manner within each table. Abbreviations for new species are n. sp. or sp. n. and for new genus are n. gen. or gen. n., as the author prefers. Also, a new rank for a taxon should be indicated by the abbreviated Latin words, *nov. grad.* Names of authors of a taxon should be linked preferably by the symbol "&," such as Jones & Smith, or by the Latin word "et." Specifying the mounting medium used for measured specimens and giving the number of paratype specimens of different stages deposited in various collections are optional, but the names and locations of collections in which the types are deposited are required. (See Nematology Newsletter 34: 8-13, 1988, for the latest list of collections.)

The description should be written in a telegraphic (condensed) style, i.e., without articles and with minimal use of verbs.

Included here are examples of subheadings recommended for the description of a new species.

SYSTEMATICS
Meloidogyne __ n. sp.
 (Figs. 1-9)

Description (Optional as a subhead)

Holotype (female in glycerine): Body length 720, without neck 530; body width 350;

Female: Measurements of 35 females in Table 1. Body white, pear shaped, variable in size, (*Note:* Use this format with tabular data.)

Allotype (male in glycerine): Body length 1,200; stylet 22....

Male (n=30): Length 995-1,450 (1,215; SD 95); ratios--a 28-45 (35; SD 4.7), b 5.8-7.6 (6.4; SD 0.5), c 65-140 (100; SD 32.3); stylet 21-24 (22.4; SD 1.2)

Body vermiform, tapering at both ends, more so posteriorly. Head slightly set off, with two or three annules....(*Note:* Use this format for nontabular data.)

Second-stage juvenile Measurements of 30 specimens in Table 2. Head region slightly set off, with two or three annules, cephalic framework weak....

Egg (n=30): Length 95-124 (112; SD 7.9); width 34-56 (48; SD 4.7); L/W ratio 2.0-2.6 (2.3; SD 0.16). Egg shell hyaline, without visible markings.

Type host and locality (Required)

Roots of *Zea mays* L., Tifton, Georgia, USA.

Type specimens (Required)

Holotype (female) Isolated from greenhouse culture, propagated on tomato (*Lycopersicon esculentum* Mill. cv. Rutgers), derived from original population from Georgia. Slide no. ____, deposited in the U. S. Department of Agriculture Nematode Collection (USDANC), Beltsville, Maryland. *Allotype (male)* Same data as holotype. Slide no. _____, deposited in USDANC, Beltsville, Maryland. *Paratypes (females, males, and second-stage juveniles)* Same data as holotype. USDANC, Beltsville, Maryland; University of California Davis Nematode Collection, Davis, California;

Diagnosis (Required)

This should be a statement of the characters or combination of characters that differentiate the taxon and make it unique from other taxa.

Relationships (Required)

This should be a comparison between the new taxon and other named, related taxa of the

same rank as the new taxon.

Remarks (Optional)

DISCUSSION (Optional)

LITERATURE CITED (Required)
(on separate page)

TABLE 1. Subheadings, rank, and requirements

Subheading rank	Subheading	Requirement
1) Centered, all caps	MATERIALS AND METHODS SYSTEMATICS	Required Required
2) Centered	<i>Taxon</i> (italics [underscore in manuscript] for genus and species only)	
2) Centered	(Figure references)	Required
3) Not indented	<i>Description</i>	Optional (as a subhead)
4) Indented	<i>Holotype</i> (e.g., <i>female</i>)	Required
	<i>Paratypes</i> (n + sex); or <i>Female</i> (n=);	Required
	<i>Allotype</i> (male);	Optional
	<i>Paratypes</i> (n + sex) or <i>Male</i> (n=);	Required
	<i>Juvenile</i> (n + stage);	Required for some species ^a
	<i>Egg</i> (n=):	Required for some species ^a
3) Not indented	<i>Type host and locality</i>	Required
	<i>Type specimens</i>	Required
	<i>Diagnosis</i>	Required
	<i>Relationships</i>	Required
	<i>Remarks</i> or by subject, e.g., <i>Biology</i>	Optional
1) Centered, all caps	DISCUSSION	Optional
	LITERATURE CITED	Required

^aRoot-knot and cyst nematodes and most related forms.

Conversion Factors for U.S. Units and International System (SI) Units of Measurement

U.S. CUSTOMARY TO SI (METRIC) UNITS	SI TO U.S. UNITS
<u>LENGTH</u>	
1 mile (statute) × 1.6093 = kilometers	1 km × 0.62137 = mi
1 foot × 0.30480 = meters	1 m × 3.2808 = ft
1 inch × 2.5400 = centimeters	1 cm × 0.39370 = in
<u>AREA</u>	
1 square mile × 2.5900 = square kilometer	1 km ² × 0.38610 = mi ²
1 acre × 0.40469 = hectares	1 ha × 2.4710 = acre
1 square foot × 0.092903 = square meters	1 m ² × 10.764 = ft ²
1 square inch × 6.4516 = square centimeter	1 cm ² × 0.15500 = in ²
<u>VOLUME - CAPACITY</u>	
1 barrel (31.5 gal) × 119.24 = liters	1 liter × 0.0083864 = bbl
1 bushel × 0.35239 = hectoliters	1 hl × 2.8378 = bu
1 cubic inch × 16.387 = cubic centimeters	1 cm ³ × 0.0161024 = in ³
1 cubic foot × 0.028317 = cubic meters	1 m ³ × 35.315 = ft ³
1 quart (liquid) × 0.94635 = liters	1 liter × 1.0567 = qt
1 quart (dry) × 1.1012 = liters	1 liter × 0.90808 = qt
1 gallon (liquid) × 3.784 = liters	1 liter × 0.26417 = gal
1 fluid ounce × 29.574 = milliliters	1 ml × 0.033814 = fl oz
<u>WEIGHT - MASS</u>	
1 ton (short 2000 lb) × 0.90718 = tons (metric)	1 t (m) × 1.1023 = t(s)
1 pound × 0.00045359 = tons (metric)	1 t (m) × 2204.6 = lb
1 ton (short 2000 lb) × 907.18 = kilograms	1 kg × 0.0011023 = t(s)
1 pound × 0.45359 = kilograms	1 kg × 2.2046 = lb
1 pound × 453.59 = grams	1 g × 0.0022046 = lb
1 avoirdupois ounce × 28.350 = grams	1 g × 0.035274 = oz av
<u>RATE MEASUREMENTS</u>	
1 mile per hour × 1.6093 = kilometers per hour	1 km/hr × 0.62137 = mph
1 mile per hour × 26.822 = meters per minute	1 km/hr × 54.681 = ft/min
1 ton (short) per acre × 2.2417 = tons (metric) per hectare	1 t/ha × 0.44609 = t(s)/a
1 pound per acre × 1.1209 = kilograms per hectare	1 kg/ha × 0.89218 = lb/a
1 pound per square foot × 4.8824 = kilograms per square meter	1 kg/m ² × 0.20481 = lb/ft ²
1 pound per square inch × 0.070307 = kilograms per sq cm	1 kg/cm ² × 14.223 = lb/in ²
1 pound per cubic foot × 16.018 = kilograms per cubic meter	1 kg/m ³ × 0.062428 = lb/ft ³
1 ounce (avdp) per gallon × 7.4892 = grams per liter	1 g/liter × 0.13353 = oz/gal
1 ounce (avdp) per acre × 70.054 = grams per hectare	1 g/ha × 0.014275 = oz/a
1 pound per gallon × 0.11983 = kilograms per liter	1 kg/liter × 8.3454 = lb/gal
1 gallon per acre × 9.3538 = liters per hectare	1 liter/ha × 0.010691 = gal/a
1 ounce (fl) per acre × 73.079 = milliliters per hectare	1 ml/ha × 0.013684 = oz/a
1 ounce (fl) per gallon × 7.8125 = milliliters per liter	1 ml/liter × 0.12800 = fl oz/gal
1 bushel per acre × 0.87077 = hectoliters per hectare	1 hl/ha × 1.1484 = bu/a
1 cubic foot per acre × 0.069971 = cubic meters per hectare	1 m ³ /ha × 14.291 = ft ³ /a
<u>OTHER MEASUREMENTS</u>	
1 pound per square inch × 6894.8 = Pascal	1 Pa × 0.00014504 = psi
1 atmosphere × 101.325 = kilopascals	1 kPa × 0.0098692 = atm
1 bar × 100,000 = Pascal	1 Pa × 0.00001 = bar
1 part per million × 0.00083305 = pounds 100 gal of water	1 ppm × 0.00100000 = gm/liter water
Degrees Celsius × 1.8 plus 32 = degrees Fahrenheit	C = (°F - 32)/1.8
1 British thermal unit × 252.12 = calories	1 cal × 0.0039663 = Btu
1 horsepower × 1.0139 = metric horsepower	1 (m)ph × 0.98632 = hp
1 horsepower × 0.74570 = kilowatt	1 kW × 1.3410 = hp
1 foot-pound per second × 1.3558 = watts	1 W × 0.73756 = ft-lb/sec
1 foot-candle × 10.764 = lux	1 lux × 0.092902 = ft-c

^aAmerican Society for Testing and Materials. 1977. Standard for metric practice. E380-76. Philadelphia, PA. Symbols for SI units have no periods, plurals nor are they capitalized unless the unit is derived from a proper name.

Marks used in Correcting Manuscripts and Page Proofs

The marks listed below are to help you in marking manuscripts or page proofs. They are readily understood by the printer. In the event of any possibility of ambiguity, however, instructions should be written fully on the manuscript or proof rather than indicated by a mark. Wherever possible, make substitutions equal in number of letters to corresponding deletions. If it is necessary to insert new material, add preferably, as a new paragraph, or at the ends of paragraphs.

—	Insert marginal correction at this point in line	—	Less space Close up entirely
tr	Transpose; indicate in text	⊙	Period
cap	Capital; put 3 lines under letter or word	—	Comma
sc	Small capital; put 2 lines under letter or word	○	Colon
lc	Lowercase letter; put oblique line through letter	;	Semicolon
ital	Italic; underline letter or word	'	Apostrophe
rom	Roman letter; circle letter or word	“or”	Quotation
sp out	Spell out; circle abbreviation	=	Hyphen
bf	Boldface; underline letter or word with wavy line	—	Straighten lines
wf	Wrong font; circle letter or word	[Move left
x	Defective letter]	Move right
	Push down space	□	Em-quad space
	Turn over or transpose	m	One-em dash
	Take out, delete	n	One-en dash
—	Space evenly	¶	Make paragraph
#	Insert space	no ¶	No paragraph
□	Insert 2 spaces		Move up; move down

Postal Abbreviations

Alabama.....	AL	Virgin Island.....	VI
Alaska.....	AK	Washington.....	WA
Arizona.....	AZ	West Virginia.....	WV
Arkansas.....	AR	Wisconsin.....	WI
California.....	CA	Wyoming.....	WY
Colorado.....	CO		
Connecticut.....	CT	Avenue.....	AVE
Delaware.....	DE	East.....	E
District of		Expressway.....	EXPY
Columbia.....	DC	Heights.....	HTS
Florida.....	FL	Hospital.....	HOSP
Georgia.....	GA	Institute.....	INST
Guam.....	GU	Junction.....	JCT
Hawaii.....	HI	Lake.....	LK
Idaho.....	ID	Lakes.....	LKS
Illinois.....	IL	Lane.....	LN
Indiana.....	IN	Meadows.....	MDWS
Iowa.....	IA	North.....	N
Kansas.....	KS	Palms.....	PLMS
Kentucky.....	KY	Park.....	PK
Louisiana.....	LA	Parkway.....	PKY
Maine.....	ME	Plaza.....	PLZ
Maryland.....	MD	Ridge.....	RDG
Massachusetts.....	MA	River.....	RV
Michigan.....	MI	Road.....	RD
Minnesota.....	MN	Rural.....	R
Mississippi.....	MS	Shore.....	SH
Missouri.....	MO	South.....	S
Montana.....	MT	Square.....	SQ
Nebraska.....	NE	Station.....	STA
Nevada.....	NV	Terrace.....	TER
New Hampshire.....	NH	Turnpike.....	TPKE
New Jersey.....	NJ	Union.....	UN
New Mexico.....	NM	View.....	VW
New York.....	NY	Village.....	VLG
North Carolina.....	NC	West.....	W
North Dakota.....	ND		
Ohio.....	OH		
Oklahoma.....	OK		
Oregon.....	OR		
Pennsylvania.....	PA		
Puerto Rico.....	PR		
Rhode Island.....	RI		
South Carolina.....	SC		
South Dakota.....	SD		
Tennessee.....	TN		
Texas.....	TX		
Utah.....	UT		
Vermont.....	VT		
Virginia.....	VA		

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