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## VIEWS AND OPINIONS

### Ruminations of a Dyspeptic Ex-Editor\*

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During my tenure as Editor of the *Annals* I learned a few things that might be useful to aspiring authors, and I also developed a whole passel of prejudices that probably will not. I have set down the entire undifferentiated mass in the hope that some parts of it might be helpful and perhaps some of the rest might be entertaining.

**THREE BASIC QUESTIONS.** It may seem trite to begin by saying that an article in a scholarly geographical journal should effectively communicate a message of interest to those who read that journal, yet authors often fail to address the three basic questions implied by that statement: (1) What message do I wish to communicate? (2) Why should another geographer be interested in my message? (3) How can my message be communicated most effectively?

The mandatory first step in preparing a journal article is to ask yourself what message you wish to communicate to those who read the journal to which you plan to submit the manuscript. You must have a clear "sense of problem"—you may prefer to call it a theme, a focus, a thesis, a point, or even something else, but you must have it. Identification of the "problem" provides the criterion of relevance for deciding what is essential and what is irrelevant. Without a sense of problem you will produce a potpourri of facts which, no matter how fascinating they may be individually, do not add up to an acceptable article. An article without a sense of problem may communicate the message that its author has assembled an enormous amount of information on a particular subject, but such a message is of little interest to other scholars; they assume you would not have written an article on a subject unless you had assembled an enormous amount of information about it.

The second question—why should another geographer be interested in my message?—must be answered in the introduction of your article, but obviously you cannot answer it until you have clearly defined the message you wish to communicate. Your message must be placed in some larger framework of ideas, whether of geography or even of knowledge as a whole, so that others may assimilate it. Every scholar is afflicted with more than he has time to read, and you must tell him at the very beginning why he should continue to read your article. He will probably turn on to the next article if you fail to catch and hold his interest, and the time you have lavished on your article will have been wasted.

You hold his interest by communicating your message logically and coherently. You must buttress your argument with enough evidence to convince a skeptical fellow scholar, but not enough to suffocate him; the rest of us are interested in your ideas,

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which we can remember, but we are easily bored by your facts, which we cannot. One of an editor's toughest but most important duties is getting authors to eliminate irrelevant material. All of us collect far more information than we need—good scholars have the instincts of pack rats—and it hurts like the very devil to have to discard material we have assembled with such tender loving care, but the author must be absolutely ruthless in pruning away all unnecessary facts, tables, graphs, maps—and all unnecessary words.

The correct and effective use of words is so essential to effective communication of ideas that I want to come back to the subject later and examine it in considerable detail. First, however, I would like to address some of the more mundane, but exceedingly important, aspects of preparing a manuscript for submission to a scholarly geographical journal.

*PREPARING THE MANUSCRIPT.* The care with which you have crafted the mechanical details of your manuscript should not influence the editor's decision to accept or reject it, but you may rest assured that the editor will bless you if you have done your best to make his task easier, whereas a sloppily prepared manuscript may induce him to comport himself in a manner which will tempt you to indulge in totally unwarranted speculation about his genealogy.

Most journals have their own distinctive ways of doing things. Even though these may seem quite silly, you should do your dead level best to tailor your manuscript to the style and other requirements of the journal to which you plan to submit it. The journal probably is not going to change its style just because you happen not to like it, and somebody has to ensure that a manuscript is in the correct style of the journal before it can be sent to the printer. The editor has to do the job if you fail to do it; he is grateful to an author who has done his best to be helpful, and he is human enough to be unhappy with an author who expects the editor to do his work for him.

Some journals publish "suggestions to authors" in varying degrees of detail; others expect you to be smart enough to figure out their style for yourself by careful examination of a recent issue. The most useful general guide, when you do not know how to cope with a particular problem, is *A Manual of Style* (Chicago: University of Chicago Press), a fascinating publication that is just as indispensable to any serious scholar as his dictionary, his thesaurus, and his atlas. Editors habitually turn to the Chicago *Manual* when they do not know how to handle something; you should develop the same habit.

The manuscript should be typed on one side of sheets of good quality bond paper no larger than  $8\frac{1}{2} \times 11$  inches; anyone compelled to use longer or wider sheets should use scissors or a papercutter to trim them to these maximum dimensions before beginning to type on them. Do not use the kind of paper called "erasable," because characters typed on such paper are easily blurred or even obliterated by a moist hand, and many hands must touch a manuscript before it can appear in print.

Make an extra copy of the manuscript and keep it in your files for safety; the mails are not completely dependable, and you need a spare copy just in case the original is lost.

Most editors do not care whether you use pica or elite type, but they do want you to stick to the same typewriter for the entire manuscript. The type bars should be clean, and the ribbon should be fresh; use a carbon ribbon if possible.

Double-space absolutely everything—the text, the footnotes, the tables, the figure captions, and anything else that is part of the manuscript. Most scholars have learned that they are supposed to double-space the text of a manuscript, but far too many remain blissfully unaware that everything else in the manuscript must also be double-spaced.

Leave adequate margins—paper is still relatively cheap. Leave at least an inch and a half on the left side of each page, and at least an inch on the other three sides.

More is better where margins are concerned; the vast boreal forest probably will not be damaged irreparably if your manuscript requires an extra sheet or two of paper because you have provided adequate margins.

The short title of the paper should be typed in the upper corner of each page of the manuscript so the page can be identified if it should happen to go astray. The pages of the text should be numbered consecutively.

The footnotes must be typed on a separate sheet or sheets, because they require a separate typesetting operation, and it is awkward for two typesetters to work from the same typescript. Each table must also be typed on its own individual sheet (or sheets) for the same reason.

Proofread the manuscript carefully before you mail it. You simply cannot rely on a harassed editor to correct the errors of your typist. Such errors are expensive if they are not spotted until after type has been set, and they can be downright embarrassing if they slip into print.

Do not submit your manuscript to more than one journal at a time. It is intensely irritating to be told, after you have waited patiently for three or four months, that your manuscript cannot be accepted for publication, but the editor knows this as well as you do, and is just as eager to give you an answer as you are to get one. It simply takes time, lots of time, to get busy scholars to give your manuscript and mine the careful attention they deserve. Overworked editors simply are not willing to invest the eight to twelve hours, perhaps far more, that are necessary for the thoughtful evaluation of a manuscript unless they have sole rights to that manuscript while they are considering it. Few crimes against scholarship are as heinous as simultaneous submission.

*The Abstract.* The abstract often is dashed off almost as an afterthought, but it is probably the most important part of your paper, because far more people will read the abstract than will ever read the entire paper. A good abstract is like a bouillon cube, not like the wrapper; it should present the true essence of the article, not merely list its ingredients. It is concerned with ideas, not with facts and procedures. The abstract should not be confused with an introduction, which places the article in a larger context of knowledge, nor with a summary, which is a longer and more detailed restatement of procedures, findings, and conclusions.

The abstract should be a single unified paragraph; few require more than 250 words. Begin with a topic sentence that states the major thesis of the article. The language of the abstract should be especially lean, taut, crisp, and hard-hitting. Use active verbs. Avoid such phrases as "is discussed" and "is described" and "is presented." Emphasize ideas. Do not merely describe procedures. Make the abstract so informative that another scholar can decide whether to read the entire article; coy "teaser" type abstracts irritate more people than they intrigue. Space-wasting verbiages such as "This paper reports that" or "The author describes" or "This study investigates" or "The data indicate that" are hallmarks of bad abstracts.

*Mathematical Symbols.* A mathematical symbol that is easy to chalk on a blackboard with a dramatic flourish can be a genuine headache for a typesetter, and fearfully expensive to boot. Use simple standard symbols, and do not invent your own. The best general principle is to use symbols that can be typed on a standard typewriter without backspacing. The *Chicago Manual of Style* has a useful chapter on "Mathematics in Type," but anyone who regularly uses mathematical symbols should acquire and consult a copy of Ellen Swenson, *Mathematics into Type*, which may be purchased from the American Mathematical Society, P. O. Box 6248, Providence, RI 02940.

*Tables.* Tables should be used sparingly, because they are expensive to print, because they are difficult to edit, and because most scholars have never learned how to design one properly. Far too many tables consist of great masses of undigested data from which

the author has been unable to distill any meaning. Even though he has been unable to make any sense of these data, or perhaps because of his inability to do so, he crams them all into a table and apparently hopes that others (a) will be smarter than he is, or (b) will be equally confused, but will attribute their confusion to their own defects of character rather than to the incompetence of the compiler of the table, upon whom the blame properly rests.

Tables should be small, simple, and easy to read. Each table should communicate a clear message. A table should include only summary tabulations and the results of calculations. Large tables with great masses of data merely waste precious space; the handful of scholars who desire complete data or calculations can obtain them directly from the author.

Tables should be designed to fit the dimensions of the journal to which they are submitted; for example, the *Annals* has single columns forty-five characters wide and double columns ninety characters wide, but single columns in *The Professional Geographer* are only forty characters wide and double columns are only eighty characters wide, and the *Geographical Review* uses only wide single columns.

**DOCUMENTATION.** Two methods of documentation are in general use. The author-date method inserts the last name of the author and the date of publication at the appropriate point in the text, e.g. (Hartshorne, 1939), and the end of the article has a complete bibliography of all works cited. The footnote method places full information at the bottom of the page. Neither method is better for all purposes. The author-date method is preferable when documentation consists entirely of references to sources and is not essential to an understanding of the text. The footnote method permits inclusion of supplemental information, evaluation of sources, and incidental comments that would interrupt the flow of the text.

Each journal uses the method that seems most appropriate to the types of articles it publishes, and most journals have developed their own distinctive quirks of style within the broad method they use. Consistency is a major objective of every journal, and you should do your best to comply with the method and style of the journal to which you plan to submit your manuscript.

**Footnotes.** The author who is permitted to use footnotes should not cite more than two or three references in any single note. Some authors labor under the delusion that it is scholarly to pad their footnotes with a complete bibliography of everything that has ever been written on their subject. This myth was imported from Europe, where most libraries are cataloged badly, if at all; a scholar working in such a library is compelled to develop his own private "card catalog" of all items related to his work and interests. In this country we have efficient librarians who catalog our books for us, and it is just plain silly to waste precious journal space on ego trips by authors who wish to see their own card catalogs in print; the information is readily available in the nearest good library.

Some long footnotes that cite many works might well be converted into review articles if you have good reason to suspect that geographers are not familiar with the ideas in these works and would benefit from having them summarized, but a ritualistic introductory "review of the literature" that merely itemizes names and titles is out of place in a scholarly journal.

Some authors attempt to justify excessive and irrelevant footnotes by complaining that people (sic) will think they do not know about a work unless they cite it. This attitude reflects an unfortunate hangover from overworked—or lazy—graduate advisory committees. The committee is responsible for ensuring that the student is familiar with the relevant work done by others. The simplest and easiest way to discharge this responsi-

bility is to require him to demonstrate such familiarity by a "review of the literature" in the first chapter of his thesis or dissertation.

Your professional peers give you more credence than your graduate advisory committee did, and well they should, because your committee has already certified your competence. Your peers do not expect you to cite everything you have ever read in every article you write, but they do expect your documentation to be functional. You obviously look silly when you fail to cite relevant work, but no sillier than when you cite irrelevant work as mere window dressing. A scholarly journal is not the place for a footnote which says, "I have heard of this work, and I realize it must be cited, but I have not actually read it, digested its ideas, and incorporated them into my own thinking."

*SOME POINTS OF STYLE.* Anyone who cares about the fine points and niceties of language is sure to be asked, "What difference does it make? You can understand what I am trying to say. It is my ideas that are important, not the manner in which I have expressed them." The proper retort, of course, is, "Perhaps I can understand what you are trying to say, but I can understand you precisely because I do care about the proper use of language as a medium of communication, and I have developed the ability to decipher your garbled transmissions. If it makes no difference to you, however, then why not do it right?"

Language is a tool that must be used skillfully and precisely; its careless use can produce misunderstanding, misinterpretation, and confusion. A manuscript that is flawed by slipshod spelling, splintered syntax, and a cavalier disregard for the canons of good usage must inevitably make one wonder whether its author has been as scrupulous as he should have been in collecting, processing, and analyzing his data.

*Sentences.* The most important idea in a sentence should be its subject. The subject should be placed near the beginning of the sentence, not buried at the end. Nouns and pronouns make the best subjects; clauses, infinitives, and participles are not so good, and sometimes they are downright bad. Do not begin a sentence with a dependent introductory clause; any sentence that has a comma in the first half dozen words or so is probably a poor sentence. Do not begin a sentence with a conjunction, such as "And," "But," "Or," or "Yet"; it is especially heinous to begin a sentence "However, . . ." A conjunction is a word that joins, and sentences that begin with joining words are unsettling and distracting; only a poor writer who has not organized his ideas clearly and logically would need to begin a sentence with a conjunction.

*First Person Singular.* Use first person singular pronouns (I, me, my, mine). Such awkward circumlocutions as "the author" and "the writer" and "your trusty scribe" have been foisted upon us by the journalistic doctrine that newspaper reporters are supposed only to report the facts and should not express opinions. Scholars have a right, perhaps even an obligation, to express their opinions about subjects they have investigated.

*Verbs.* Use active rather than passive verbs: "I drew the maps" is better than "The maps were drawn by me."

Avoid verb forms ending in "-ing" and "-ed" unless they are supported by auxiliary verbs. Verbs ending in "-ing" make singularly awkward subjects for sentences; e.g., "Beginning a sentence with a verb ending in '-ing' can be confusing," can't it?

Contractions such as "can't" and "don't" have no place in formal writing.

Do not change verbs into nouns if the change necessitates a second verb. Do not "make a comparison," "conduct an analysis," "proceed with a description," "present an argument," or "begin a beginning" when you can compare, analyze, describe, argue, or begin.

Many scholars use the present tense of the verb inappropriately. The present tense should not be used to describe past opinions or past events, including the various activities that were involved in the preparation of your manuscript. Any reference to an author's statements, beliefs, or opinions should be in the past tense. It is correct to say that "the paper by Jones states that . . ." if indeed the paper does contain such a statement, but it is not correct to say "Jones states that . . ." or "Jones believes that . . ." because poor old Jones may have changed his mind since he wrote that paper.

Do not use the "breathless historical present" tense to describe the collection and processing of data or any of the other procedures you used in developing the article.

*References to Figures and Tables.* All references to figures and tables should be placed in parentheses at the ends of statements about their substantive content, e.g. (Fig. 1, Table 1). Do not belabor the obvious by saying that "Figure 1 shows the distribution of something," because any simpleton should be able to look at Figure 1 and see what it shows if it has been designed with even a modicum of skill. It is equally ludicrous to say that "The data are presented in Table 1," unless you wish to insult the intelligence of your reader.

*Italics.* Words that are to be set in italic type should be underlined in the typescript. Restrict italics to letters used as mathematical symbols and to unfamiliar words and phrases in a foreign language. Do not use italics for emphasis. A good writer does not require the crutch of italics; he emphasizes ideas by the manner in which he organizes and presents them. Italics are like neon signs; a few may be effective, but their impact declines dramatically as their number increases.

*Latin Abbreviations.* Be sure you understand the meaning of scholarly Latin abbreviations before you use them to ensure that you use them correctly; e.g., it is just as silly to place a period after the "et" in "et al." as it would be to put a period after the "et" in "etc."

*Hyphens.* Hyphens are a headache for authors and editors. Get in the habit of checking your dictionary whenever you are in doubt. The twelfth edition of the *Chicago Manual of Style* has a useful discussion of the use of hyphens in compound words on pp. 130-136, and the table on pp. 133-136 is especially helpful.

**TROUBLESOME WORDS AND PHRASES.** The words and phrases listed below are frequently misused in geographical writing.

*The above, the above mentioned, the aforementioned, the aforesaid, as discussed previously, will be discussed later, as discussed later.* All such terms of cross-reference are hallmarks of weak organization of ideas, and they reveal that the author needs to order his material more logically and effectively.

*As well as.* This phrase is a stronger version of the conjunction "and," and not a substitute for it; do not use "as well as" unless you wish to put special emphasis on the idea that follows it.

*Both.* This word may be an adjective, a pronoun or a conjunction; when used as a conjunction it must be followed by parallel construction to avoid confusion. The phrase "to both faculty members and students" implies that the faculty has only two members; it should be rephrased "both to faculty members and to students" if the faculty has more than two members.

*Criteria, data, media, phenomena.* These words are the plural forms of the nouns "criterion," "datum," "medium," and "phenomenon," and they should be used only with the plural forms of verbs and pronouns.

*Due to, owing to.* The phrases "due to" and "owing to" are not acceptable substitutes for "because of."

*Estimated.* The vague phrase "it has been estimated that" is sheer frustration unless

the author identifies the person who did the estimating; it is much better to say "Smith estimated that. . ."

*Etc.* This popular abbreviation has no place in scholarly writing; all too often it means only "I think there must be more than I have listed, but I'll be darned if I know what they are."

*Exist, occur.* These verbs often are merely pretentious circumlocutions for the verb "to be," and they seldom add anything but verbiage to a sentence.

*Fad words.* Vogue words are vague words, and they should be avoided just as assiduously as one avoids any other social disease. Such words frequently substitute for careful thinking and precise phrasing, and they communicate little meaning, because they mean all things to all people. Furthermore, such currently fashionable and much abused words as "ecology," "environment," "landscape," "spatial," and "systems" will date your article just as surely and quickly as articles written in the 1960s were dated by the then fashionable term "parameter."

*For.* Do not use this preposition when you mean "because"; you may understand what you mean, but another person may have to reread your sentence to extract its meaning.

*Interesting, important.* It is a complete waste of space to say that something is interesting or important; if it is, one does not have to be told, and saying that it is does not make it so if it is not.

*It.* Do not use this pronoun unless it has a clear antecedent.

*Likely.* This adjective is not an acceptable substitute for the adverb "probably" in a statement that something probably will happen.

*Literature.* Most references to "the literature" are pretentious, and often such references are a lazy author's attempt to imply far more reading than he has actually done.

*Located, situated.* These words are favorite geographical pleonasm; Chicago is in Illinois, to be sure, but nothing is gained except verbosity by saying that Chicago is located or situated in Illinois.

*Note.* This verb is another favorite bit of geographical deadwood, whether in figure captions or in the phrase "it is important to note that. . ."

*Percent, percentage.* "Percent" is an adjective, and may be used only to modify a noun; it may never stand alone. The noun form is "percentage."

*Prior to, previous to.* These terms are unacceptable substitutes for the simpler term "before"; the author who uses them under the delusion that they are grander or more genteel is only being pretentious.

*Reader.* Reference to "the reader" gives an article a faintly musty and slightly Victorian aura that is quite out of place in a contemporary scholarly journal.

*Reference to, respect to.* A pathetically weak transition of ideas is exposed by a sentence that begins "With respect to" something, "With reference to" something, or "With this in mind." A paper that contains such phrases clearly requires reorganization.

*Research.* This noun should never be used as a verb; only the uneducated "research" anything. One who engages in research may be a scholar, an investigator, or a student, but no educated person would call him a "researcher."

*Respectively, namely.* These words are seldom necessary and are almost always pretentious; avoid them.

*Some.* The phrase "Some have said that. . ." is maddeningly frustrating; identify the villain (or hero) by saying "Jones has said that. . ."

*Spatial.* This adjective crept into geography to distinguish distributions shown on maps from statistical distributions, which are shown on graphs, but it became epidemic after Sputnik and the moonshots. Use of the term seems to make some geographers feel taller, more "scientific," or more respected, but excessive use has debased it to the status

of a mere shibboleth. (The men of Gilead used "shibboleth" as a test word to identify Ephraimites, who could not pronounce it correctly; some geographers sprinkle "spatial" through their writing to indicate that it really is truly geographical.)

*There are.* Any sentence that begins with these two words is a sentence that needs rewriting. "There were many dead leaves lying on the ground" is a verbose way of saying "Many dead leaves lay on the ground." Especially objectionable is the sentence that begins with "There are" or "It is" followed later by "which" or "who"; e.g., "There are some geographers who have never learned this fact."

*This.* Do not use the pronoun "this" unless it is accompanied by a noun; it is especially irritating, and often confusing, to find the pronoun "this" referring vaguely to some general idea in the preceding sentence or paragraph.

*Thus, hence, consequently, therefore, as a result.* A poor writer begins sentences with stiff and awkward conjunctive adverbs such as these when he is not sure that his argument has been developed clearly and logically. A paper requires reorganization if it contains sentences beginning with these adverbs.

*Very.* This intensive adverb has been so overused that it has lost its value; add it to the list of four-letter words that should not be used in polite society.

*Which, that.* The nonrestrictive relative pronoun "which" should not be substituted for the restrictive relative pronoun "that." A restrictive relative clause is one that defines, identifies, or limits; it sets something off from others of the same category, and its omission would change the meaning of the entire sentence. A nonrestrictive clause merely gives a reason or adds information. "The taxes that are reasonable will be paid" says that some taxes will not be paid, but "The taxes, which are reasonable, will be paid," adds information about all taxes. Avoid "which" as much as possible.

*While.* This conjunction should be used only in the sense of "during the time that"; it is not an acceptable substitute for "although," "whereas," "as," "but," or "and."

*ENVOI.* The precepts I have enunciated here may seem quite elementary, yet some geographers appear to be blissfully unaware of most of them, and rare indeed is the geographer (present company included!) who scrupulously complies with all of them. Like all rules, these rules were made to be broken, but they should be broken wisely and intentionally, not foolishly and unwittingly. Perhaps the most important rule of all is "Don't be afraid to ask for help in improving your writing, and don't be too proud to accept it." Not a single one of us is a perfect writer; each of us needs help, and some of those who think they need it least are the very ones who need it most.

Do not be discouraged by difficulties, setbacks, and rejections. The person who succeeds is the one who triumphs over many obstacles and disappointments; the one who fails is willing to accept any one of these as an adequate excuse for giving up and quitting. Writing is darned hard work, but it is well worth the time and effort it demands. Keep on trying. Geography can be no better than the books and articles that are written by its practitioners, and your well-written manuscript makes each and every one of us just a wee bit richer.



## GEOLOGICAL NOTES

### A SCRUTINY OF THE ABSTRACT, II<sup>1</sup>

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#### ABSTRACT

A partial biography of the writer is given. The inadequate abstract is discussed. What should be covered by an abstract is considered. The importance of the abstract is described. Dictionary definitions of "abstract" are quoted. At the conclusion a revised abstract is presented.

For many years I have been annoyed by the inadequate abstract. This became acute while I was serving a term as editor of the *Bulletin* of The American Association of Petroleum Geologists. In addition to returning manuscripts to authors for rewriting of abstracts, I also took 30 minutes in which to lower my ire by writing, "A Scrutiny of the Abstract."<sup>1</sup> This little squib has had a fantastic distribution. If only one of my scientific outpourings would do as well! Now the editorial board of the Association has requested a revision. This is it.

The inadequate abstract is illustrated at the top of the page. The passive voice is positively screaming at the reader! It is an outline, with each item in the outline expanded into a sentence. The reader is told what the paper is about, but not what it contributes. Such abstracts are merely overgrown titles. They are produced by writers who are either (1) beginners, (2) lazy, or (3) have not written the paper yet.

To many writers the preparation of an abstract is an unwanted chore required at the last minute by an editor or insisted upon even before the paper has been written by a deadline-bedeveled program chairman. However, in terms of market reached, the abstract is *the most important part of the paper*. For every individual who reads or

listens to your entire paper, from 10 to 500 will read the abstract.

If you are presenting a paper before a learned society, the abstract alone may appear in a pre-convention issue of the society journal as well as in the convention program; it may also be run by trade journals. The abstract which accompanies a published paper will most certainly reappear in abstract journals in various languages, and perhaps in company internal circulars as well. It is much better to please than to antagonize this great audience. Papers written for oral presentation should be *completed prior to the deadline for the abstract*, so that the abstract can be prepared from the written paper and not from raw ideas gestating in the writer's mind.

My dictionary describes an abstract as "a summary of a statement, document, speech, etc. . . ." and that which *concentrates in itself the essential information* of a paper or article. The definition I prefer has been set in italics. May all writers learn the art (it is not easy) of preparing an abstract containing the *essential information* in their compositions. With this goal in mind, I append an abstract that should be an improvement over the one appearing at the beginning of this discussion.

#### ABSTRACT

The abstract is of utmost importance, for it is read by 10 to 500 times more people than hear or read the entire article. It should not be a mere recital of the subjects covered. Expressions such as "is discussed" and "is described" should *never* be included! The abstract should be a condensation and concentration of the *essential information* in the paper.

<sup>1</sup> Revised from K. K. Landes' "A Scrutiny of the Abstract," first published in the *Bulletin* in 1951 (*Bulletin*, v. 35, no. 7, p. 1660). Manuscript received, June 3, 1966; accepted, June 10, 1966.

Editor's note: this abstract is published together with The Royal Society's "Guide for Preparation

and Publication of Abstracts" to give *Bulletin* authors two viewpoints on the writing of abstracts.

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## The Abstract Rescrutinized

It would seem that little more could be said about writing abstracts after K. K. Landes's (1951, 1966) concise classics, but an irritating new weakness seems to be creeping into manuscripts, calling for further scrutiny. I refer to the growing tendency of authors to write long, eloquent abstracts that are actually *introductions* rather than summaries. Let me reproduce one sentence (slightly disguised) that begins the "abstract" of an otherwise excellent manuscript I am currently reviewing: "The long-standing concept of the \_\_\_\_\_ region of \_\_\_\_\_ as part of the stable craton which has undergone only minor tectonism during the past several hundred million years is being modified in view of accumulating evidence for minor, but widespread Quaternary and recent activity." This preamble is followed by 1½ similar pages, which would be a good introduction but is not a good abstract.

I would like to help authors avoid this problem by adding a few refinements to Landes's maxims. First, start the abstract by telling the reader at once what the paper *is*: new data, a review of progress, a new technique, a synthesis, or whatever describes the *nature of the paper*. To be sure, this recommendation can in principle be followed by a well-designed title, such as Isachsen's (1975) "Possible evidence for contemporary doming of the Adirondack Mountains, New York, and suggested implications for regional tectonics and seismicity," almost an abstract by itself. But if the title does not make it clear what the paper is, the abstract should, preferably in the first line: "This paper reports a comparative study of digital image enhancement techniques for synthetic aperture radar (SAR) using SIR-B and Seasat images of the Canadian Shield" (Masuoka et al., 1988). This first line should not be a simple restatement of the paper's title.

A second suggestion: write the abstract in a terse, almost telegraphic style, saving your eloquence for the body of the paper. The abstract is not an introduction to the paper, but a freeze-dried version of it, so to speak, intended as a "condensation and concentration of the essential information in the paper" (Landes, 1966). It should be written for quick reading, with the assumption that interested readers can go on to (or look up) the paper itself. Unnecessary descriptive phrases ("critically placed"), qualifiers ("limited number"), and caveats ("it must be pointed out") that may be necessary for completeness in the text should be left out of the abstract if at all possible. (The examples quoted are from actual manuscripts I have recently reviewed.)

A final suggestion: pack as much specific information into the abstract as possible—locations, rock names, temperatures, pressures, anomaly values, stratigraphic thicknesses, petrologic systems, and the like. The

way to do this is to cancel temporarily the assumption of the previous paragraph, and to write the abstract as if it were all that would survive the fall of civilization. There are obviously limits to how much can be included in an abstract, especially without figures, and it may even be necessary to use phrases detested by Landes, such as "is described" or "is presented." But abstracts can be surprisingly informative and self-sufficient if properly written.

A word on timing: I suspect that many authors make the mistake of writing the abstract before the paper. I used to do this myself, until I found I was writing—yes—introductions. The way to avoid this is obviously to write the abstract after the paper is finished, when you will know exactly what you are summarizing.

Following Landes's precedent, I present an abstract of this paper.

This paper presents three suggestions for better scientific abstracts: begin the abstract by briefly describing the *nature of the paper* (new data, review, critique, etc.); write the abstract not as an introduction to the paper but as a *tersely styled summary* of its essential information; and include as much *specific information* (locations, compositions, temperatures, etc.) as possible. Write the abstract after finishing the paper, to avoid the common fault of abstracts that are good introductions but poor summaries.

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