worth the expense, but this one and several others that we have published in the past several years do have indexes.

You will note that this set of preprints was published on a four months schedule. This is almost as good a schedule as the preprint books that are published with volunteer help by divisions. The main differences are that these papers are critically reviewed and that this volume represents final publication. As a result, the papers in the book will be abstracted promptly and individually in "Chemical Abstracts," just as though they were published in a journal.

All volumes in "Advances in Chemistry Series" are published on a three or four months schedule from the date of receipt of the last paper. Sometimes the papers do not come in all at once, and our schedule has dragged out more than we want it to, but if we receive all the papers very promptly, prompt publication can be assured. In addition, authors may order reprints of their articles.

Criteria by which titles are judged for "Advances in Chemistry Series" are:

1. A chemical theme that is not over-populated by books that are currently available.
2. A relatively homogeneous collection of papers reflecting satisfying coverage of the topic embraced by the title.
3. Papers that have not been published elsewhere.
4. Market potential that will allow the edition to break even at a reasonable price per volume.

The reason for the last criterion is that "Advances in Chemistry Series" is an unsubsidized operation. It must be self-supporting. If the funds that are invested in a volume are not returned through sales, there will be that much less to produce later volumes, and so on to bankruptcy. Prices of individual volumes vary, depending on size and market. Some volumes in the "Series" have a lower market potential than would be required by a commercial publisher, and this is reflected in their prices. But even these prices are reasonable in today's market. Prices of current volumes reflect the fact that the books were published without a guaranteed market. If a division wished to order copies of a volume for all its members, savings could be made. Bulk orders in advance of publication, which amounts to minimum guaranteed distribution, would insure lower unit prices.

In summary, "Advances in Chemistry Series" offers a medium for the divisions to publish symposia promptly as permanent literature. Publication in "Advances" is more rapid than in most journals. Papers published in the "Series" have a standing equivalent to the journals and are recognized by immediate abstracting in *CA*. Volumes in the "Series" are printed in a convenient and attractive format with journal-quality printing. Finally, papers and symposia published in "Advances in Chemistry Series" are readily available as part of the chemical literature because the "Series" is recognized and regularly shelved by leading academic and industrial libraries.

The Place of Preprints in the Chemical Literature*

By FRED A. TATE
The Chemical Abstracts Service, Ohio State University, Columbus 10, Ohio
Received August 20, 1962

Based on a sampling of the papers presented at the September, 1955, Meeting of the American Chemical Society, 21% of the papers had not appeared in print within 5 years of the meeting dates.[1] This agrees fairly well with a study[2] of the April, 1957, Meeting which showed that 26% of the papers of selected divisions were neither published in ACS journals nor recorded as released for publication.

Preprints make up only a small portion of ACS Meeting papers, but the proportion is growing each year. This trend will continue as other divisions start to issue preprints. It is expected that 1962 will show the largest total yet. The size of the problem is shown by the fact that 1198 preprinted papers have been delivered at ACS National Meetings from January, 1958, through April, 1962. During this period two more divisions started to issue preprints. However, based on some counts which we have made recently on preprints of four ACS divisions for the years 1958–60, 334 of the total of 757 papers have not yet appeared in the formal literature.

Irretrievability of so much data is a serious problem to all chemists. This paper treats one aspect of the preprint problem. The problem is, however, not limited to ACS Meetings or to meeting papers. It is more general. It relates to all informal literature including abstracts of ACS Meeting papers, governmental reports, and academic theses. Though the following remarks are directed to ACS preprints, they are generally applicable to all informal literature.

Chemical Abstracts does not offer a critical review of the world's chemical literature. It does try to cover all new technical chemistry; it does not cover economics, formulation studies (not including chemical reaction), mechanical testing, or shaping of materials. "New" is, however,

* Presented before the Division of Chemical Literature, ACS National Meeting, Atlantic City, N. J., September 10, 1962.

(1) H. Friedman, Chemical Abstracts Service, unpublished study. This study was based on a review through *CA*'s Author Indexes. As some of these papers would possibly not be covered by *CA* even if published, this figure is somewhat high.

(2) Office of the Director of Planning, ACS Fundamental Journals, unpublished study.

a matter of definition. The *CA* staff is not nearly large enough to decide objectively whether each published paper offers new chemistry. The newness might involve, as an aside in the original paper, a variation of the purification procedure in the preparation of a known compound or a small theoretical point. It is not economically reasonable for each paper to be compared in detail with all previously-published, related papers to select never-before-reported chemistry. Instead, *CA* operates on the assumption that the following processes and people will eliminate the undesirable duplication:

1. The administrative efforts governing the birth of the literature, which include:
   a. The author(s)' integrity.
   b. The organizations which sponsor the work.
   c. The societies which sponsor meetings and journals.
   d. The editors and refereeing experts.
2. Abstractors and section editors who are experts in the fields in question.

With the exception noted below, every effort is made to eliminate duplicate coverage by *CA* of work which appears in more than one published form. Such checking is expensive. As a practical compromise, papers such as preprints which may appear in more than one published form are picked up by *CA* at the latest point wherever possible. For instance ACS preprints are kept 18 months before a check is made to determine which papers have not already appeared in an established journal. This means that such journals are assumed to print first-run papers. The papers appearing in such journals are not regularly checked for prior publication except in the normal compilation of the author index. Informal literature, such as ACS preprints, however, is routinely checked. Why must preprints be checked for later publication? Because somewhere around 40% have been shown as not appearing in established journals 4–5 years after a meeting. For legal purposes, such preprinted papers are considered to be published, though, from a practical standpoint, published in a fashion which restricts their availability. *CA* has taken the position that such reports provide useful information which should not be denied to users of this indexing service. Industrial *CA* users and divisions which publish preprints have requested that this literature be covered.

Various arguments have been presented by persons who have decried *CA*'s coverage of preprints. It would be worthwhile to review some of these reasons.

Some editors feel that if the author of a meeting paper does not have the initiative to submit the paper to an established journal or if he will not or cannot write it in a style acceptable to the journal of his choice, the author should be penalized by not having the paper recorded in a retrievable way. This position completely ignores the interests of the many parties who may later want to consult the report; it completely ignores the legal questions and any importance to technical progress.

It is sometimes stated that meeting papers are speculative and therefore should not be recorded for posterity or that authors would cease to speculate if their papers were indeed retrievable. Neither slant quite makes sense. Oral reports given for the purpose of sounding out reactions to ideas are seldom, if ever, given at national meetings. Such half-considered thoughts are reserved for reverie, intimate circles in corridor discussions, coffee-time chatter, personal letters, off-hour conversation, or comments made in the discussion periods which follow the papers (these comments are not printed and, therefore, are not abstracted). Scientists are, in general, no less interested in being correct with a limited audience than being correct in print in a formal journal. Human nature requires that wild speculations are seldom offered to the public.

It is sometimes stated that meeting papers are not well refereed. This would seem to be a divisional administrative problem, not the problem of the man submitting a paper or of the man who may wish to retrieve it. It is true that meeting papers frequently are not very good, not because the work is speculative or unsound, but rather because it isn't novel. Repetitive papers are not uncommon. Not only would more careful refereeing increase the quality of the papers, it would also help with the headache of overly-large meetings.

It has been recommended by editors that informal (meeting and preprint) reports which have been abstracted in *CA* should not be later published in ACS journals. However, editors do not in general check *CA* for coverage as a routine part of review procedures.

It is a *CA* policy to reabstract a paper only when publication occurs in a much more widely available journal than the version first abstracted. Thus, if a paper were abstracted first as an ACS preprint and later were to appear in, for example, an ACS fundamental journal, the paper would be reabstracted, at least by title with reference to the earlier abstract. On the other hand, a paper which was first abstracted from a fundamental journal is not reabstracted as a preprint of a meeting paper, though preprints sometimes are published after a more formal publication has appeared.

Assuming the ACS editorial rule that *CA*-abstracted meeting papers should not be accepted for publication makes sense, let us examine dimensions of the problem. Table I shows that a 12-month period following a meeting is not long enough to allow essentially all of the intended publication. But 18 months for all practical purposes eliminates the problem.

It would seem that full application of *CA*'s 18-months rule would not deprive ACS editors of an appreciable number of papers. The table does show, however, that a considerable amount of material is now indexed in *CA*

Table I
Preprints—Division of Petroleum Chemistry

Meeting	Total preprinted	Preprints abstracted	Abstracted preprints which later were published
Preprints Abstracted 18 Months After Meeting			
Spring, 1958	66	18	0
Fall, 1958	63	30	0
Spring, 1959	69	11	0
Fall, 1959	43	12	1
Spring, 1960	53	29	2
Preprints Abstracted 12 Months After Meeting			
Fall, 1960	51	45	12

which would not be indexed if preprints were not abstracted.

It is the position of *CA* that papers which correspond to preprints and which appear beyond its routine 18-month waiting period will often include additional data beyond that presented in the original meeting paper. Such papers should be classed as different publications and the new information should be abstracted (this point is not involved in the above table).

It is the contention of the *CA* staff that preprints are a valuable source of information which should be retrievable by the general chemical public. They should not be available only to the very limited number of chemists who are fully aware of the existence of this form of literature and who have it available in an immediately accessible library. Other than *CA*, for these preprints there is no indexing source which is generally available to the chemical world.

The Journals of Inorganic Chemistry

By R. F. TRIMBLE
Department of Chemistry, Southern Illinois University, Carbondale, Ill.
Received September 10, 1962

An earlier report on the periodical literature of inorganic chemistry[1] was based in part on a frequency count of journals abstracted in Section 6 (old classification) of *Chemical Abstracts (CA)* for 1958. The present paper has a broader scope and covers the journal and patent literature of industrial inorganic chemistry and the various areas to which cross-references are made. It is hoped that this work will supply a base line for those in the future who would like to study the relative growths of these two fields with respect to each other or to chemistry as a whole or the changes ih emphasis of particular journals or linguistic groups.

The journal sources of papers abstracted in Sections 14 (Inorganic Chemicals and Reactions) and 15 (Industrial Inorganic Chemicals) of *CA* **56** (Jan. through June 1962) were tabulated. The cross-references were not included in the journal count but the sections to which specific references were made were noted. In Section 15 papers and patents were counted separately. The languages used were also noted. The results are presented in Tables I to VI.

There were 258 journals cited in Section 14. Of these only 11%, the 29 shown in Table I, supplied 69% of the abstracts. On the other hand, there were 127 journals (49%) which supplied only a single abstract apiece to account for less than 8% of the total. The figures were quite similar in 1958: 22 journals (8%) supplied 59% of the abstracts and 124 journals (46%) supplied one abstract apiece to make up 7% of the total. The ranking of the major journals is also much the same as it was in 1958. These similarities were to be expected since the change in section number from 6 to 14 did not involve a change in the definition of the scope of the section.

Although the rate of publication has approximately doubled since 1955—1747 abstracts in 1958 and 1796 (including cross references) for the first half of 1962—the number of journals has remained about the same (266 and 258) and the degree of scatter among journals is about the same. The startling change since 1958 is the greatly increased contribution of *Zh. Neorgan. Khim.* from 9.2 to 22.3%.

The new *Inorg. Chem.* did not appear until February and is undoubtedly much lower on the list than it should be. In view of the recently announced expansion of the journal it should eventually rank second or third.

Tables II and III show clearly the great importance of patents as technical literature in industrial work. Abstracts of patents outnumber those of papers in Section 15 by about 3 to 1.

Only four journals are common to Tables I and II and only one journal *(Ind. Eng. Chem.)* in Table II also appears in Wagner's list of journals cited in chemical patents.[2] The differences between Tables I and II warrant treating Sections 14 and 15 separately.

The sections to which cross-references were most frequent are shown in Tables IV and V. The large number of sections (33) referred to from Section 14 shows the broad scope of inorganic chemistry and the difficulties in constructing classification schemes. The cross-references amount to 9% of the abstracts in Section 14 and 34% of the abstracts of papers in Section 15.

The *CA Physical Chemistry Sections* which is to be made available separately next year will consist of Sections 1 through 14. In this study these sections supplied only 84 (56%) of the cross-references in Section 14.