

A Basic Journal Collection-ISI[®] Lists the Fifty
Most-Cited Scientific and Technical Journals.

January 12, 1972

In a previous editorial¹ I indicated that we would be publishing the list of the 50 most frequently cited journals. Previously we have indicated the 50 most cited papers,² and the 50 most cited books.³

Using a sample of approximately 1,000,000 citations drawn from the *Science Citation Index*[®] for the last quarter of 1969, we compiled a *Journal Citation Index* which shows the frequency of citation for the journals cited. This sample was matched by yet another sample based upon every 30th record out of approximately 4,000,000 citations appearing in the entire year 1969. There can be little doubt, therefore, that the following list of 50 journals represents those that are most frequently cited in the *entire* scientific literature. We have not attempted to segregate life sciences from physical sciences, nor have we attempted to make corrections that might be introduced in the relative ranking if in fact we had covered even more source journals than the 2,000 or so represented in the 1969 samples.

One might criticize the coverage of the sample in evaluating the Soviet literature. Certainly if more Russian journals were covered there would be a higher number of citations to leading Soviet journals published by the Soviet Academy of Sciences. However, since approximately 50% of citations in Soviet journals are to Western periodicals,

the relative ranking of leading Western journals will also increase if we include even more Russian source material. Nevertheless, since a small core of journals accounts for a large percentage of all citations, a similar pattern will probably be observed for Soviet literature. For this reason the ranking of leading Soviet or other journals might change.

This list tells us something about both the historical and current significance of these 50 journals. But it is important to observe that more than half of these journals do *not* appear on the list of the 50 journals with the highest “impact factor”. Impact factor is determined by dividing the total number of citations by the number of articles published. The impact factor, therefore, does not discriminate against the small journal. And if one computes an impact factor based upon articles published in a recent period one can obtain a more objective and precise evaluation of newer journals. Such impact or “immediacy” factors may discriminate against journals in those fields where many years may elapse before “impact” is observed. Mathematics is a good example.⁴ In my next editorial on the *Journal Citation Index*, I will list 50 journals with the highest impact factors. Subsequently a list of the journals with the highest “immediacy index” will be published. Journals

with high impact during a current year turn out to be surprisingly different in some respects than one might have expected.

yet unpublished lists of frequently cited journals a paper including a list of the 500 most frequently cited journals has been submitted to *Science*.

To anticipate inquiries about the as

List of Fifty Most-Cited Journals

Rank	Times Cited	Title
1.	26263	Journal of the American Chemical Society
2.	20674	Physical Review
3.	17112	Journal of Biological Chemistry
4.	15325	Nature
5.	14028	Journal of the Chemical Society
6.	13690	Journal of Chemical Physics
7.	9752	Science
8.	9550	Biochimica et Biophysica Acta
9.	8260	Proceedings of the National Academy of Sciences of the United States of America
10.	7638	Biochemical Journal
11.	7617	Lancet
12.	6581	Physical Review Letters
13.	5789	Comptes Rendus Hebdomadaires des Seances de l'Academie des Sciences
14.	5420	American Journal of Physiology
15.	5401	Journal of Organic Chemistry
16.	5190	Journal of Applied Physics
17.	5079	Proceedings of the Society for Experimental Biology and Medicine
18.	4982	Journal of Molecular Biology
19.	4966	Journal of Physiology (London)
20.	4864	Proceedings of the Royal Society (London)
21.	4813	Journal of Cell Biology
22.	4785	Journal of Clinical Investigation
23.	4703	Journal of Physical Chemistry
24.	4541	Chemische Berichte
25.	4512	New England Journal of Medicine
26.	4492	Journal of the American Medical Association
27.	4304	British Medical Journal
28.	4271	Astrophysical Journal
29.	4259	Analytical Chemistry
30.	4167	Zhurnal Eksperimentalnoi i Teoreticheskoi Fiziki
31.	4147	Journal of Bacteriology
32.	4076	Biochemistry
33.	4034	Nuclear Physics

34.	3943	Physics Letters
35.	3937	Tetrahedron Letters
36.	3871	Journal of Experimental Medicine
37.	3787	Annals of the New York Academy of Sciences
38.	3689	Archives of Biochemistry and Biophysics
39.	3537	Journal of Geophysical Research
40.	3458	Journal of Polymer Science
41.	3417	Biochemical and Biophysical Research Communica- tions
42.	3372	Federation Proceedings
43.	3308	Journal of Physics
44.	2922	Transactions of the Faraday Society
45.	2917	Acta Crystallographica
46.	2869	Doklady Akademii Nauk SSSR
47.	2781	Journal of Pharmacology and Experimental Therapeu- tics
48.	2728	Angewandte Chemie
49.	2627	Journal of Immunology
50.	2620	Fizika Tverdogo Tela

1. Garfield, E. Cost/benefit analysis and core journal collections in scientific libraries. *Current Contents*, No. 45, p. 5-6, November 10, 1971.
2. -----, "Citation indexing, historio-bibliography, and the sociology of science." In *Proceedings of the Third International Congress of Medical Librarianship, Amsterdam, May 1969*. (Amsterdam, Excerpta Medica, 1970), p. 187-204. Reprinted in: Garfield, E. Citation indexing and the sociology of science. *Current Contents* No. 15, p. M23-41, April 14, 1971.
3. -----, Play the new game of twenty citations; wherein ISI reveals the fifty most frequently cited "non-journal" items. *Current Contents* No. 32, p. 5-9, August 11, 1971.
4. Schatz, J.A. Some super-classics of mathematics. *Notices Amer. Math. Soc.* 18(5): 723-5, 1971.