



to avoid the embarrassment and delay of rejection by submitting it in the first place to a lesser journal.

I'm sure prestigious journals occasionally err in rejecting papers their editors may not, for one reason or another, recognize as potentially significant. As a result, an important paper will occasionally appear in a less prestigious journal. Perhaps it's unavoidable--the competition for "prime" publication space grows as the number of scientists grows.

I wish that time and resources had allowed me to analyze the age and institutional affiliation of the authors of these 25 highly cited papers. Such analysis is the subject of serious research at ISI® and elsewhere. I suspect we could verify the repeated assertion that it is younger men who make most of the breakthroughs--a message that cannot be repeated often enough these days to people like Casper Weinberger.

The list of 1971 papers below shows the number of times each has been cited in 1971, 1972 and in the first six-months of 1973. Though the last number isn't included in the total citations by which the papers are ranked, it shows, in most instances, that the citation rate of the listed papers is increasing.

You may be frustrated by our fail-

ure to supply authors' addresses along with the bibliographical information. I would remind you that all the addresses are available in ISI's *WIPIS*,<sup>6</sup> but if you will send me a self-addressed envelope, I'll have them looked up for you. You are right if you conclude that this offer is a ploy to find out whether anyone out there is listening!

1. Garfield, E. Were the 1972 papers most cited in 1972 the most significant? *Current Contents*® No. 42, 17 October 73, p. 5-7.
2. Goffman, W. A mathematical method for analyzing the growth of a scientific discipline. *J. Assoc. Computing Machinery* 18(2):173-85, April 1971.
3. Garfield, E. Citation analysis as a tool in journal evaluation. *Science* 178:471-79, 1972. This study was based on 1969 data.
4. Garfield, E. & Sher, I.H. New factors in the evaluation of scientific literature through citation indexing. *American Documentation* 14(3): 195-201, 1963.
5. Garfield, E. Citation impact depends upon the paper, not the journal! Don't count on citation by association. *Current Contents* No. 22, 30 May 73, p. 5-6.
6. -----, *ISI's Who Is Publishing In Science*® (*WIPIS*) offers instant access to research and research workers worldwide. *Current Contents* no. 21, 24 May 72, p. 5-7.

## The 25 1971 Articles Most-Cited in 1971 and 1972.

| Rank | Total<br>71 & 72 | Citations |      | Jan.-June<br>1973 * | Bibliographic Data  |
|------|------------------|-----------|------|---------------------|---|
|      |                  | 1971      | 1972 |                     |   |
| 1.   | 184              | 66        | 118  | (34)                | Sanders, J.K.M. & Williams, D.H. Tris (dipivalomethanato) europium; a paramagnetic shift reagent for use in nuclear magnetic resonance spectroscopy. <i>Journal of the American Chemical Society</i> 93(3):641-5, 10 February 1971.   |
| 2.   | 155              | 28        | 127  | (89)                | Wessells, N.K., Spooner, B.S., Ash, J.F., Bradley, M.O., Luduena, M.A., Taylor, E.L., Wrenn, J.T. & Yamada, K.M. Microfilaments in cellular and developmental processes. <i>Science</i> 171 (3967):135-43, 15 January 1971.   |
| 3.   | 121              | 36        | 85   | (52)                | Rabellino, E., Colon, S., Grey, H.M. & Unanue, E.R. Immunoglobulins on the surface of lymphocytes. I. Distribution and quantitation. <i>J. Exp. Med.</i> 133(1):156-67, 1 January 1971.   |
| 4.   | 115              | 19        | 96   | (70)                | Vane, J.R. Inhibition of prostaglandin synthesis as a mechanism of action for aspirin-like drugs. <i>Nature New Biology</i> 231(25):232-5, 23 June 1971.  |
| 5.   | 109              | 27        | 82   | (56)                | Arrighi, F.E. & Hsu, T.C. Localization of heterochromatin in human chromosomes. <i>Cytogenetics</i> 10(2):81-6, 1971.   |
| 6.   | 103              | 27        | 76   | (23)                | DeTar, C.E., Jones, C.E., Low, F.E., Weis, J.H., Young, J.E. & Tan, C.I. Helicity poles, triple-Regge behavior, and single-particle spectra in high-energy collisions. <i>Physical Review Letters</i> 26(11):675-6, 15 March 1971.  |
| 7.   | 95               | 13        | 82   | (91)                | Sumner, A.T., Evans, H.J. & Buckland, R.A. New technique for distinguishing between human chromosomes. <i>Nature New Biology</i> 232(27):31-2, 7 July 1971.   |
| 8.   | 87               | 25        | 62   | (52)                | Dickerson, R.E., Takano, T., Eisenberg, D., Kallai, O.B., Samson, L., Cooper, A. & Margoliash, E. Ferricytochrome c. I. General features of the horse and bonito proteins at 2.8 Å resolution. <i>J. Biol. Chem.</i> 246(5):1511-35, 10 March 1971.                         |
| 9.   | 86               | 20        | 66   | (57)                | Caspersson, T., Lomakka, G. & Zech, L. The 24 fluorescence patterns of the human metaphase chromosomes; distinguishing characters and variability. <i>Hereditas</i> 67(1):89-102, 1971.   |
| 10.  | 85               | 19        | 66   | (45)                | Rondeau, R.E. & Sievers, R.E. New superior paramagnetic shift reagents for nuclear magnetic resonance spectral clarification. <i>J. Am. Chem. Soc.</i> 93(6):1522-4, 24 March 1971.   |
| 11.  | 84               | 0         | 84   | (54)                | Lee, S.Y., Mendecki, J. & Brawerman, G. A polynucleotide segment rich in adenylic acid in the rapidly-labeled polyribosomal RNA component of mouse sarcoma 180 ascites cells. <i>Proc. Nat. Acad. Sci. USA</i> 68(6):1331-5, June 1971.                                     |
| 12.  | 81               | 21        | 60   | (50)                | Johnson, G.S., Friedman, R.M. & Pastan, I. Restoration of several morphological characteristics of normal fibroblasts in sarcoma cells treated with adenosine-3':5'-cyclic monophosphate and its derivatives. <i>Proc. Nat. Acad. Sci. USA</i> 68(2):425-9, February 1971.  |
| 13.  | 79               | 0         | 79   | (54)                | Edmonds, M., Vaughan, M.H., Jr. & Nakazato, H. Polyadenylic acid sequences in the heterogeneous nuclear RNA and rapidly-labeled polyribosomal RNA of HeLa cells; possible evidence for a precursor relationship. <i>Proc. Nat. Acad. Sci. USA</i> 68(6):1336-40, June 1971. |
| 14.  | 75               | 0         | 75   | (72)                | Fairbanks, G., Steck, T.L. & Wallach, D.F.H. Electrophoretic analysis of the major polypeptides of the human erythrocyte membrane. <i>Biochemistry</i> 10(13):2606-17, 22 June 1971.  |
| 15.  | 74               | 15        | 59   | (40)                | Matsuo, H., Baba, Y., Nair, R.M.G., Arimura, A. & Schally, A.V. Structure of the porcine LH- and FSH-releasing hormone. I. The proposed amino acid sequence. <i>Biochem. Biophys. Res. Comm.</i> 43(6):1334-9, 18 June 1971.  |

\*These 1973 citation counts have not been included in the totals given in the second column of this table.

## The 25 1971 Articles Most-Cited in 1971 and 1972.

| Rank | Citations        |      |      |                    | Bibliographic Data   |
|------|------------------|------|------|--------------------|--|
|      | Total<br>71 & 72 | 1971 | 1972 | Jan.-June<br>1973* |  |
| 16.  | 73               | 0    | 73   | (52)               | Darnell, J.E., Wall, R & Tushinski, R.J. An adenylic acid-rich sequence in messenger RNA of HeLa cells and its possible relationship to reiterated sites in DNA. <i>Proc. Nat. Acad. Sci. USA</i> 68(6):1321-5, June 1971.                   |
| 17.  | 73               | 22   | 51   | (49)               | Hellstrom, I., Hellstrom, K.E., Sjogren H.O. & Warner, G.A. Demonstration of cell-mediated immunity to human neoplasms of various histological types. <i>Internat. J. Cancer</i> 7(1):1-16, 15 January 1971.                                 |
| 18.  | 73               | 13   | 60   | (39)               | Hubbell, W.L. & McConnell, H.M. Molecular motion in spin-labeled phospholipids and membranes. <i>J. Am. Chem. Soc.</i> 93(2):314-26, 27 January 1971.  |
| 19.  | 72               | 18   | 54   | (23)               | Miledi, R., Molinoff, P. & Potter, L.T. Isolation of the cholinergic receptor protein of <i>Torpedo</i> electric tissue. <i>Nature</i> 229(5286):554-7, 19 February 1971.  |
| 20.  | 72               | 17   | 55   | (36)               | Smith, J.B. & Willis, A.L. Aspirin selectively inhibits prostaglandin production in human platelets. <i>Nature New Biology</i> 231(25):235-7, 23 June 1971.  |
| 21.  | 68               | 19   | 49   | (16)               | Abarbanel, H.D.I., Chew, G.F., Goldberger, M.L. & Saunders, L.M. Small dimensionless parameter to characterize multiple-Pomeranchon phenomena. <i>Physical Review Letters</i> 26(15):937-40, 12 April 1971.                                  |
| 22.  | 67               | 17   | 50   | (37)               | Ferreira, S.H., Moncada, S. & Vane, J.R. Indomethacin and aspirin abolish prostaglandin release from the spleen. <i>Nature New Biology</i> 231(25):237-9, 23 June 1971.  |
| 23.  | 67               | 20   | 47   | (17)               | Moore, D.H., Charney, J., Kramarsky, B., Lasfargues, E.Y., Sarkar, N.H., Brennan, M.J., Burrows, J.H., Sirsat, S.M., Paymaster, J.C. & Vaidya, A.B. Search for a human breast cancer virus. <i>Nature</i> 229(5287):611-5, 26 February 1971. |
| 24.  | 66               | 13   | 53   | (35)               | Brandt, R.A. & Preparata, G. Operator product expansions near the light cone. <i>Nuclear Physics B</i> B27(3):541-67, 15 April 1971.   |
| 25.  | 64               | 16   | 48   | (16)               | Harari, H. Dual absorptive model for dips in inelastic hadron processes. <i>Physical Review Letters</i> 26(22):1400-4, 31 May 1971.  |

\*These 1973 citation counts have not been included in the totals given in the second column of this table.