



CURRENT COMMENTS

Introducing *Citation Classics*: The Human Side of Scientific Reports

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With this first issue of 1977, we begin an experiment unique to *Current Contents*[®]. Immediately following this essay, you will discover a new feature entitled *Citation Classics*. Each week we will select an article that has become a classic in its field. Each *Citation Classic* will include a commentary by the author. In particular, we want to know why the paper proved to be so important, and, as a consequence, highly cited. For each paper we will provide a synopsis or digest. In this way, readers who are unfamiliar with the field can better appreciate its significance.

Citation Classics will enable the authors of these papers to discuss their work retrospectively. It is the kind of science 'reviewing' rarely seen in scientific journals. It will provide a kind of living history. Authors will discuss interesting aspects in the development of their techniques, the role played by coauthors or others, and the encouragement received from colleagues. This is the human side of science.

Undoubtedly most of these authors will not only be among the most cited, but also the most highly-qualified in their respective fields. The candidates for *Citation Classics* will be selected from a group of 500 papers most cited during the years 1961-1975. Many of these have been listed before in *Current Contents*.

Papers in this group include some of the most cited papers ever published--thus the

designation of 'classics.' If one were to assume that the history of science encompasses 20 million papers, then one percent of these would constitute a large block of 200 thousand. One tenth of one percent would include a healthy 20 thousand, and .01% about 2,000 papers. Even if our estimate of the number of papers published to-date is high, 500 papers is still an incredibly small part of the history of scientific publication. It will be interesting to observe over the next ten years whether the literature doubles and how many new classics will have appeared on our lists by that time.

Despite the age of the papers (most were published during the 1940s, 50s, and 60s), many achieved their *highest* citation rates within the past four years. Predominating the list, which will be published in the future, are 'methodology' papers in the fields of molecular biology and biochemistry, clearly reflecting the high rate of activity in those areas. Addressing that point, Dr. Walter C. Schneider, of the National Cancer Institute, remarked that, "It is not entirely surprising to me that this should be the case since methods are the backbone of all scientific research."¹

The authors of these classics, upon being informed of the status of their papers, expressed varying degrees of surprise and delight. Dr. Schneider wrote of his 1944 paper on phosphorus compounds

in animal tissue² that, "It is indeed most gratifying to learn 31 years after publishing my paper that it is one of the most cited scientific papers."¹ His sentiments are echoed by Dr. Norton Nelson, of the New York University Medical Center, who commented that, "I was startled but interested at your letter notifying me that my paper, 'A photometric adaptation of the Somogyi method for the determination of glucose (1944),'³ was still a best seller."⁴

In some cases, perhaps, these papers may have marked the beginnings of distinguished careers in the sciences. In the instance of Dr. W.E. Trevelyan, of Surrey, England, it seems that his 'classic' paper was his first published research. He comments: "Your letter...informing me that my paper on the detection of sugars on paper chromatograms⁵ had attained the dignity of a citation classic caused a deal of ribald comment amongst my colleagues and may cost me a few pints [of beer]. Never mind, I am secretly very pleased-- it was my first publication, based on work done in my first research job. Moreover, I

left the scientific field as an undergraduate in 1937, and came back as a self-taught biochemist ten years later, my research post being obtained on the basis of an MSc I collected for work done in a sewage laboratory with a handful of 1 ml pipettes and litre bottles."⁶ (It was *not* our intention to cause the authors of citation classics any financial loss in order to quell the ribaldry of envious colleagues!)

In a previous editorial⁷ we published a list of the all-time classics. Were we to publish a similar list today, it would have changed very little. Indeed, the 50 papers would appear in very nearly the same rank-ordered positions. But the all-time citation classic is Lowry's 1951 paper, "Protein measurement with the Folin phenol reagent,"⁸ which I discussed on an earlier occasion.⁹ This single paper has accumulated more citations (50,016) than the next 6 papers combined! It is worth noting, too, that Professor Lowry has authored two other papers on the list of 500 classics.^{10,11} It seems fitting, that Professor Lowry's commentary on his 1951 paper should initiate our new feature page.

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