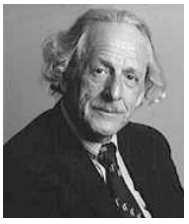

Science Needs Critics

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The professions of science administrator and science writer have become well established in recent years. The first arose in response to the rapid growth of the scientific enterprise and the second in response to its increasing importance to society. And the growth of science has spawned other science-supporting or parascience professions such as the science publicist at research institutes (see "Good Science Needs Good Reporting," *The Scientist*, December 15, 1986, p. 13). Yet more are in prospect.

About 10 years ago, observing on the one hand the high levels of unemployment and underemployment of Ph.D. scientists and, on the other, the need for more good literature reviews, I suggested that science reviewing would become a full-time career. Review articles have become increasingly important in the era of Big Science. Nowadays, many research administrators can find time only for reviews and abstracts. Naturally, the professional science review writer requires expert knowledge to control and competently summarize specialists' research. But the science reviewer also needs knowledge of information science and technology.

In fact, information science can materially aid the writer, and not only in efficiently collecting relevant sources on a particular topic. Techniques such as co-citation analysis, bibliographic coupling, and the making of historiographs and multidimensional scaling maps of research fronts have yielded new understandings of the structure and substance of specialty areas. In the new ISI *Atlas of Science*, we am uniting the strengths of objective, systematic analysis of the scientific literature with the expert judgment and experience of specialists to create a new generation of reviews. Acquaintance with modern information techniques is a must for science researchers today. At the minimum, every research team should designate a qualified information specialist to ensure maximum efficiency.

Another science-related career of the future is proposed by Maurice Goldsmith, director of the International Science Policy Foundation of London. In *The Science Critic*, due next month from Methuen, Goldsmith describes the science critic as "a public policy generalist alerting us to the growing-pains of future worlds through the day-to-day discoveries of the present." (p. 16) More specifically, the science critic will attempt to see the whole

picture of science, examine what its future might be in light of its past, classify the similarities that appear across specialties, monitor the integrity of scientific activity, and convey something of its substance to non-scientists, so they might "understand its poetry and cease to have fear of it." (p. 83) Who will be qualified to serve as a science critic? Goldsmith says, "Clearly not the scientist who prepares an annual review of scientific progress, for he is too narrow. Nor is he the information officer who has a clearly defined task and is mission-oriented. Nor is he the science writer, although he is more likely to emerge from this category of communicator than from the others, mainly because of his imposed breadth of interest" (p. 83).

The science reviewer would serve the professional, whereas the science critic would serve both the public and the professional, to some degree mediating between them.

The growth of science will stimulate new professions along both fronts—some directly related to helping the professional and others to communicating the substance and issues of science to the public. The new professions are inevitable. They are also welcome. None (or very few) of us can do it all anymore. This age of greater and greater specialization has rendered the paradigm of the "two cultures" somewhat obsolete, for even within science itself we find many separate cultures that are little understood by colleagues in other areas. The new parascience professions can be expected to bring together isolated realms within science and involve the public in the debate over the future course of science. ■

A luncheon honoring UK contributors to the Citation Classics® *commentaries that appear in* Current Contents® *took place in Manchester. Attending were (seated from left) Harry Smith, president of the 14th International Congress of Microbiology; Eugene Garfield, President of the Institute for Scientific Information and Publisher and Editor-in-Chief of* THE SCIENTIST®*; (standing from left) Stuart Glover, University of Newcastle upon Tyne; E.S. Anderson, former director of the Enteric Reference Laboratory, London; Jack Melling, Centre for Applied Microbiology and Research, Porton Down; Sir Mark Richmond, vice-chancellor of the University of Manchester; Derek Ellwood, University of Durham Industrial Research Laboratories; Sir Andrew Huxley, Master of Trinity College Cambridge and Nobel Laureate. Also in attendance were Sir Cyril Clarke, Liverpool University; John Postgate, University of Sussex; Tim Crow, Northwick Park Hospital, Harrow; Donald S. Robinson, University of Leeds; Gustav Born, King's College, London; Hugh Sinclair, International Nutrition Foundation; Ruth Itzhaki, University of Manchester Institute of Science & Technology; Ronald Laskey, Cambridge; Ray Cooper, Burden Neurological Institute, Bristol; and Alec Coppen, West Park Hospital, Epsom.*