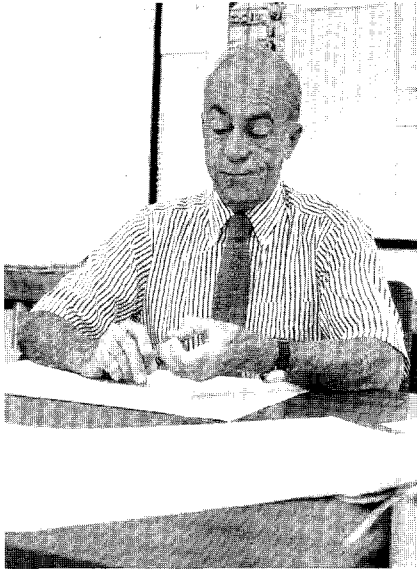


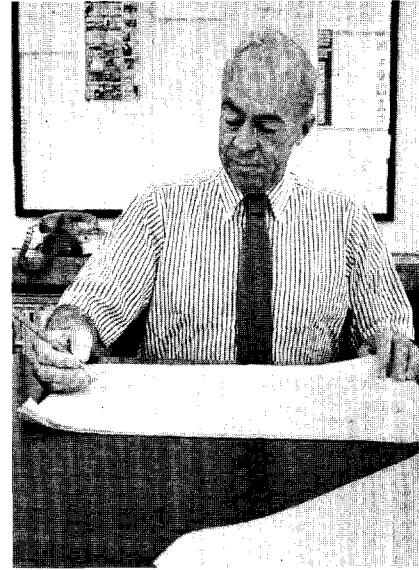
Editing from Scientist to Informed Layman

by Edward Hutchings Jr.

Except for a few Depression jobs (bank teller, bookkeeper, and door-to-door distributor of samples of All-Bran) I have been in the magazine business since I graduated from Dartmouth in 1933. I've done a lot of free-lance article writing, edited and collaborated on several books (including, as I now recall, one entitled How to Live Without a Woman), and written some short stories for magazines like Colliers and The New Yorker. But my career proper started at the old Literary Digest — where I developed great respect for good proofreading by running a department called "Slips That Pass in the Type." For a couple of years I reported on the advertising business and wrote a humor column for a magazine called Tide, then worked as news editor of Business Week, associate editor of Look, and executive editor of Liberty. I was managing editor of an experimental McGraw-Hill magazine called Science Illustrated when Caltech asked me to come out and run a magazine for them. In 1948, then, I decided to try California for a couple of years — and here I am, 31 years later, just retiring as editor of Engineering and Science — but staying on as lecturer in journalism. I must like it here.



Talent in fundamental science, I have found, does not necessarily extend to communication, so . . .



. . . I have done everything I could in editing E&S articles to keep them as simple as possible . . .

For more than 30 years I was editor of *Engineering and Science*, a magazine published by the California Institute of Technology and its Alumni Association. It goes to alumni, faculty, students, parents, and trustees, to individuals who contribute funds, and to industrial concerns that support research at Caltech, to high school science teachers and principals, libraries, newspapers and news magazines, and, finally, to a group of general subscribers.

This miscellaneous group of people (now numbering a little over 12,000) has one thing in common — an interest in the California Institute of Technology, and therefore an interest in, and some curiosity about, the fields of science and engineering. Naturally, these fields are the main concern of the Caltech magazine, which in years past was primarily devoted to reports of the research in progress at Caltech. Inevitably, in recent years, we have reported less on science for science's sake and more on science for society's sake. This was not simply a change in our editorial concerns; it was a reflection of the changing concerns of the people who make up this institution. But whether about basic science or about science and society, our articles have been written, whenever possible, by the men and women who are faculty members or alumni of the Institute.

With an established editorial purpose for the magazine, we have found that we have almost limitless possibilities as to subject matter, not to mention a list of potential writers that, in another field, would be called a star-studded cast. When *Fortune* magazine did an article on Caltech several years ago, it reported that the Insti-

tute "harbors what is America's richest concentration of talents in fundamental science." These are the potential writers for a Caltech magazine. I said *potential*. The talents in fundamental science do not necessarily extend to communication.

As a matter of fact, when I first went to work on the Caltech magazine in 1948, I was prepared for (1) a mass resistance to communication, and (2) an inability to communicate in the cases of the few who might be willing. That was shortly after World War II. A lot of boundaries between science and non-scientific affairs disappeared during the war, and ever since then it has become increasingly clear that scientists would have to not only communicate intelligibly with each other, but with non-scientists as well.

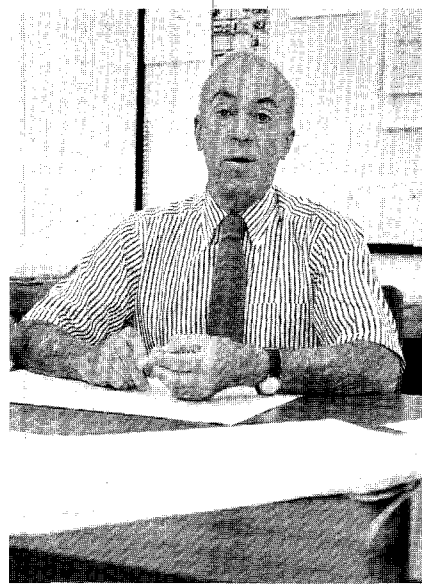
As to the ability of scientists to communicate the details of their work — I think I have seen better, and clearer, and more professional (and more interesting) writing by some of Caltech's scientists than I have in most of the articles written by science popularizers in the general magazines.

I don't know why this should be surprising. Most of the Caltech faculty are teachers, after all. And teachers are in the business of communicating. Good teaching demands many of the same talents as good writing — including skillful presentation, an awareness of the nature of the audience, clarity, color, even a little ham.

In producing a magazine at Caltech, then, I have had a collection of not-unwilling and not-untalented writers at my disposal. How have I gotten them to write for *E&S*? Well, what it ultimately has



... Inevitably, of course, every article has been something of a compromise between editor, author, and time ...



... In fact, editing to bring scientist and layman together has been like operating a lonely hearts club ...



... Those two nice kids didn't know each other, and so I have kept trying to promote a match.

come down to has been whether they had a desire or willingness to communicate. Of course, there were always plenty of people who resisted doing this. I think, though, that once a faculty member wrote an article for the magazine the results often made him a regular contributor.

E&S goes to such an assortment of people that a single article might bring a variety of responses — a letter from a trustee, an alumnus, or a high school science teacher, for example. The very fact that something a faculty member had written about his work reached, interested, penetrated, and even affected so many kinds of people was, I guess, the main incentive to writing for this kind of magazine.

An added attraction, and a most important one, was the fact that, at the same time, a generally understandable research article let a man's colleagues, and people in other disciplines, know something of the nature and progress of his work. As our world — even the confined world of Caltech — gets larger and more complex, this kind of communication becomes more and more valuable.

We have tracked down articles for *E&S* in various ways. Sometimes we persuaded a scientist or engineer to revise a technical paper already presented at a meeting of a professional society — scaling it down to more general understanding. Sometimes we were able to get a professor to write an article based on a talk he gave at a departmental seminar. Sometimes we interviewed a faculty member and then worked with him to come up with a satisfactory article.

Probably the most complicated process

involved using a tape recorder for the holdout who, under no circumstances, would agree to take the time to write anything for us. Dick Feynman was the prime example. Dick never wrote anything down, but whenever he gave a talk, we'd tape it, then show him the transcript. This would be such a shock to him that, to regain his self-respect, he would work with us to put his words into printable form. And that's how *E&S* came to print the collected speeches of Richard Feynman — and although this particular editorial relationship started out with a certain amount of kicking and screaming, Feynman now refers to me as "my publisher."

I haven't mentioned our steadiest contributor of all — Lee DuBridge. We ran most of his speeches — and he made a lot of them. All good. I don't know how many times a DuBridge speech bailed out the next issue of *E&S*.

The level of understanding at which an article in *E&S* was written has fluctuated from issue to issue — even from article to article. This was inevitable, because every article has been to some extent a compromise. While I have done all I could to direct and edit the article so as to keep it as simple as possible, the author has often gone to great lengths to keep the level of understanding as high as possible. What was finally published represented the point at which any particular compromise reached its farthest limits on each side. Or sometimes, what was finally published merely represented the point at which time ran out on us.

In any case, the level of understanding we tried to maintain in *E&S* was one that

could be comfortably followed by that rare creature known as the informed layman. Of course, most of the magazine's readers are Caltech alumni, and it has often been argued that whatever else they are, they are *not* laymen. But we discovered that even they are usually laymen in all fields outside their own.

In brief, in editing material for *E&S* I tried to follow the old dictum of never underestimating the intelligence of our readers while never overestimating their knowledge. Keeping in mind that our articles would be read by high school students as well as by the head of the American Association for the Advancement of Science, I was willing to take the risk of explaining too much rather than too little.

E&S has not tried to do the same job as a strictly technical publication. There, the purpose is solely to present factual information. What we were trying to do was to help fill the need that was recognized by the AAAS back in 1951, when it said:

"It is absolutely essential that science — the results of science, the nature and importance of basic research, the methods of science, the spirit of science — be better understood by government officials, by businessmen, and indeed by all the people."

Of course, I haven't often thought of my job in such lofty terms. As editor of a magazine that tried to bring scientist and layman together, I felt more like the operator of a lonely-hearts club. I happened to know these two nice kids. They were willing but shy, and they didn't know each other too well. I've tried to promote a match. □