

Herzberg, publishes many of his papers in the Canadian Journal of Physics. Dr. A.D. Allen of the University of Toronto published one of the first papers on nitrogen fixation in the Canadian Journal of Chemistry; and Dr. Raymond Lemieux, the first scientist to synthesize sugar, publishes most of his results in the Journals. As soon as a paper is accepted for publication, it is forwarded to the Manager's Office to be copy-edited and sent on to the printer. Last year, 3,350 papers were submitted to the Journals with 2,423 being accepted for publication (including 1,866 Canadian papers). This represented a total of 18,321 printed pages.

Papers are published in the language in which they are submitted, that is, they may be published in either of Canada's two official languages.

"This has been the case since 1929 when the Journals were initiated," says Dr. Bishop. "As we were able to arrange adequate translation services over a period of time, abstracts of each paper in both languages also began to be published. Today, abstracts appear in all eleven Journals in both languages."

Because the success of any scientific journal vitally depends upon high standards, the scientific editor is the key person and his selection must be made with care. The scientific editors, who are responsible for setting and maintaining high standards, are chosen from the government, university or industrial sectors and take full responsibility for the scientific content of the Journals. They should have a sufficiently well established research record to command the respect of both authors and referees and should be presently active in research in the laboratory.

"This is important," says Dr. Bishop, "because with the speed at which science moves nowadays, anyone who is out of the laboratory for as little as six months, is 'out of touch'."

Present activity in laboratory research helps the editor to select reviewers and to be able to make assessments of the reviewer's remarks as they pertain to the manuscript.

"The third quality of a good editor," continues Dr. Bishop, "follows from the other two: if a person is a busy research worker and has been busy enough to produce a good research record, then that person will usually be well organized."

Diplomacy and tactfulness are additional qualities for the job.

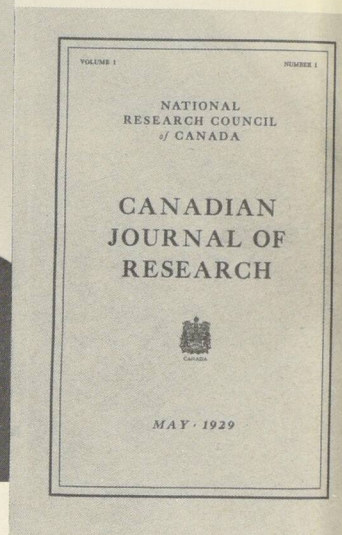
"In other words, the person has to be firm and stand by judgments made and be able to express these in a non-abrasive way," Dr. Bishop says. "And it helps to have a sense of humor."

"This combination of qualities is not so rare as might be supposed. The main difficulty in recruiting scientific editors seems to be that many active researchers are very jealous of demands on their time outside the laboratory. However, it is essential to the well-being and continuation of the Journals that such people be persuaded to serve a term as editor."

Although the editors serve without remuneration, the Journals budget does provide each with a secretary and the necessities for the operation of an office.

Over 21,600 copies of the Journals are distributed throughout the world each year, some 66 per cent of the subscriptions being from outside Canada. Circulation for individual journals is as large or larger than most well-established European journals and the Journals are covered by all abstracting and current awareness programs.

"Scientific knowledge is international," says Dr. Bishop, "so that when you are publishing a scientific paper, you are communicating the results not just to a national scientific



Dr. C.T. Bishop, Editor-in-Chief of the Canadian Journals of Research, and Associate Director, Division of Biological Sciences, NRC, with Volume 1, Number 1, of the Canadian Journal of Research, published in May, 1929. • Le Dr C.T. Bishop, rédacteur-en-chef des Journaux canadiens de la recherche scientifique et directeur associé de la Division des sciences biologiques du CNRC et une photographie du volume 1, numéro 1, du "Canadian Journal of Research", publié en mai 1929.

community but to the international scientific community. Work done in Canada may be of just as much use — in fact, may be of even more use — to a physicist who is working in the particular area of that paper in Australia, India, or France, as it is to another physicist in Canada. And so the Journals are part of the international communications network of science."

But perhaps even better evidence of the impact of the Canadian Journals is contained in a Journal Citation Report, published by the Institute of Scientific Information in Philadelphia. From a data base of almost 20,000 journals (which included any journal that was cited three or more times in the last quarter of 1969), the first 1,000 were ranked according to the total number of citations and then by what was called an impact factor — that is, the average number of citations per paper. The total number of citations for a particular journal were divided by the number of papers that were published in the journal. This eliminated the factor of the size of the journal (a journal which publishes 1,000 papers would naturally be expected to have more citations than a journal that publishes only 500).

"All of the Journals published by NRC ranked in the first 500 of the 1,000 journals that were rated," says Dr. Bishop. "Since the total data base was 20,000 journals, any that rank in the first 500 are in the top two-and-a-half per cent of the world scientific literature as ranked by citation."

"The Journals are certainly making a very valuable contribution to both the national and international scientific communities, justifying the wisdom of the policies evolved through NRC over the last 20 years, policies whereby Journals have always been under the continuing direction of active scientists." □

Joan Powers Rickerd