Book Reviews

E. W. R. Steacie and Science in Canada

Science in Canada: Selections from the Speeches of E. W. R. Steacie (University of Toronto Press, Toronto, Canada, 1965. 208 pp., $5.95), edited by J. D. Babbitt, presents only one phase of Steacie's contributions to science—that of his leadership in the administration of science in Canada and in international areas. Of necessity such a compilation must omit a review of his contributions to basic science, but these contributions have been more fully covered in other vitae concerned with his various honors and awards. All too often the scientist's vita involves only an abbreviated summation of his technical papers and books, and seldom does one have such a clear presentation of a leading scientific administrator's philosophy and of his objectives in the coordination of science with political and social orders as that which Babbitt presents in this volume.

Steacie's accomplishments as a physical-organic chemist are well recognized and documented in his approximately 200 technical articles and several books dealing with atomic and free-radical reactions, photochemistry, thermal decomposition, and photosensitive reactions. It is most useful to have this other side of Steacie's activities collected into a compact and easily accessible form. The parameters of administrative and social concepts with regard to science are less well defined than Steacie's purely scientific contributions, so many readers may find that they are not in full agreement with all of his positions, but one must admire his consistency with respect to a position, combined with his ability to adjust to the situation at hand.

We admire his ability to preserve the scientists' "freedom," while remaining an employee in a governmental laboratory. At the same time we observe with regret that, all too often in the United States, our solution to this problem has been to transfer the government laboratories and personnel to universities and industry on the grounds that civil service does not provide the proper atmosphere for free research. In neither case has the "solution" really effected an improvement of civil service which permits this research freedom, although the way in which Steacie, as president of the National Research Council of Canada, treated the problem is a close approach to the satisfactory solution.

Babbitt and his associates have made an excellent selection of many parts of Steacie's speeches and papers so that they present a coherent narrative of his ideas and of his philosophy. Scientists in Canada, like those in the Scandanavian or Benelux areas, do not have to be concerned about a quantitative superiority in numbers or amount of money spent, but rather can be oriented toward a quality program. It is obvious from his writings that Steacie enjoyed being able to demonstrate that limited size in science provides for efficiency of operation. In many cases, the methods of organizing and directing science which he and his associates have successfully devised and put into practice have been urged as a possibility for use in other major areas of science, but they have been rejected as involving too great a risk to allow one to experiment with them or to try them out.

His approaches to the equivalent of a national department of science—that of coordinating university grants, fellowships, and government-sponsored research—have shown the practical success of such a philosophy. One might take issue, however, with his philosophy that research should be free and nonobjective to the extent of denying the funding agency the right to determine the amount to be expended, the groups with whom the work should be coordinated, or the area of science in which the work is to be done.

Steacie's views on approaching ceilings in the supply of scientists and engineers, the need for a quality improvement program in scientific education, and the disproportionate emphasis on physics compared with chemistry are similar to the positions of other scientists today.

After reading these selections from his speeches and writings, those who knew Ned Steacie during his lifetime (1900–1962) will feel that they know him even better. The carefully selected passages or complete speeches present a sequence of viewpoints that leads to a well organized discussion on science in relation to public policy and society. It is, in fact, of considerable interest to note that science in Canada has had to face many of the problems that we in the United States are facing today and that in many cases differing solutions have been tried with equally differing degrees of success.

At times we have considered that owing to its gigantic size our scientific nation required a treatment different from that suitable for smaller scientific groups, but Steacie's experience would indicate that one might extrapolate within our tenfold difference or that we might treat the problem in many of our states as separate units of a larger combination.

Steacie's close relationship with the International Council of Scientific Unions (he was elected president in 1961) and with the United States and many other nations gives a more international flavor and attitude to his philosophy. The final papers in this volume are concerned with the problems of international science. These provide a fitting conclusion to a review of the administrative phase of a most influential career in science.

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Alkaloid Chemistry

According to the author's preface, this sequel to part 1, which was published in 1957, was prepared partly as a rebuttal to a review in which Wenkert criticized the omission of several groups of alkaloids [*J. Am. Chem. Soc.* **80**, 2030 (1958)]; and mainly because he wanted to incorporate newly elucidated structural data to complete the earlier volume. In this book, **The Alkaloids**, part 2