Document généré le 25 avr. 2024 15:42

Scientia Canadensis
Canadian Journal of the History of Science, Technology and Medicine
Revue canadienne d'histoire des sciences, des techniques et de la médecine

AVERY, Donald H. *The Science of War: Canadian Scientists and Allies Military Technology during the Second World War*. Toronto, University of Toronto Press, 1998.

Bill Rawling

Volume 24, numéro 52, 2000

Les artisans canadiens au XVIII[e] siècle

URI : https://id.erudit.org/iderudit/800422ar
DOI : https://doi.org/10.7202/800422ar

Aller au sommaire du numéro

Éditeur(s)

CSTHA/AHSTC

ISSN

0829-2507 (imprimé)
1918-7750 (numérique)

Découvrir la revue

Citer ce compte rendu

Rawling, B. (2000). Compte rendu de [AVERY, Donald H. *The Science of War: Canadian Scientists and Allies Military Technology during the Second World War*. Toronto, University of Toronto Press, 1998.] *Scientia Canadensis*, *24*, 110–112. https://doi.org/10.7202/800422ar

Copyright © Canadian Science and Technology Historical Association / Association pour l'histoire de la science et de la technologie au Canada, 2002

Ce document est protégé par la loi sur le droit d’auteur. L’utilisation des services d’Érudit (y compris la reproduction) est assujettie à sa politique d’utilisation que vous pouvez consulter en ligne.

https://apropos.erudit.org/fr/usagers/politique-dutilisation/

Cet article est diffusé et préservé par Érudit.

Érudit est un consortium interuniversitaire sans but lucratif composé de l’Université de Montréal, l’Université Laval et l’Université du Québec à Montréal. Il a pour mission la promotion et la valorisation de la recherche.

https://www.erudit.org/fr/

AVERY, Donald H. *The Science of War: Canadian Scientists and Allied Military Technology during the Second World War.* Toronto, University of Toronto Press, 1998.

Few historians of Canadian science will disagree with the suggestion that the period from 1939 to 1945 was markedly different from the years that preceded or followed; never before or since has scientific endeavour been so closely integrated, and on such a scale, with military activity. Donald Avery, in *The Science of War: Canadian Scientists and Allied Military Technology during the Second World War*, is very much within this mold, noting in one instance that "The Second World War differed substantially from the First World War" in the production of "new weapons and techniques, often with little awareness of their operational purpose..." (p. 4)

The contribution Canadian scientists made to that conflict's operations is thus an important theme in Avery's book, but there are others;

he also examines how war changed Canada's scientific community and he takes a look at the ethical debate over the role it played in the creation of destructive technologies; in discussing the latter he also studies security issues and the postwar activities of the Canadian Association of Scientific Workers. With these themes permeating the narrative, Avery traces the development of such projects as radar, proximity fuses, RDX explosives, chemical and biological warfare, and atomic research; left to other researchers to study in detail are aeronautical engineering, operational research, code breaking, and military medicine (p. 11), gaps which testify to the breadth and depth of scientific work carried out in the 1939–45 war.

The reader should be warned, however. Although Avery narrows his topic to increase understanding, the result is not necessarily an easy read because he uses scientific terms without always defining their meaning. For example, how is one supposed to determine the significance of Otto Maas' publications on "equations of state, viscosities, sound propagation, electrolyte phenomena, surface tension, specific heats," etc (p. 26)? Why is a 10 cm wavelength important in aerial nightfighting radar (p. 73)? What is a wave guide (p. 90), or a coincidence fuse (p. 103), or a spin-type battery (p. 104)? The latter is an excellent example of how more detailed explanation could lead the reader to a much greater comprehension of the subject; proximity fuses functioned by incorporating a small electronic device which set off the explosive in the shell when close enough to an aircraft to do damage, greatly increasing the effectiveness of anti-aircraft artillery by doing away with the need for a direct hit. Powering the device, however, was a battery which, like all others, had a limited shelf life and hence might not function on the day it was needed; the answer was to keep the battery inert by separating its acids with glass dividers which broke at the moment of firing — an ingeniously simple solution.

Furthermore, since *The Science of War* will no doubt stand for some time as the main reference work on the subject — and deservedly so — the reader should also be warned of the occasional inaccuracy. For example, the 1923 Nobel prize for physiology/medicine went only to Banting and MacLeod, not Best and Collip as well (p. 31), an issue that has raised no little controversy since. Also, the Department of Munitions and Supply did not predate the outbreak of war, as Avery implies (p. 107). But to be fair, such errors are rare, symptomatic of the author's conscientiousness not only in carrying out research but in turning raw data into prose.

Indeed, *The Science of War* is an educational experience as it provides a wealth of detail on such topics as the international background to Canadian research (e.g. the multi-nation effort to produce a proximity fuse), on how the Canadian scientific community developed ever closer ties with its US counterpart, and on the importance of liaison given the developments mentioned above. Relationships were not always cordial, however, and Avery points out how Great Britain was no less than patronizing towards Canadian efforts in the realm of radar, at least in its early days (p. 24), while even within Canada there was occasional conflict over scientific and related issues. Communication between the Royal Canadian Navy and the National Research Council was often poor as the latter attempted to develop a radar system suitable for ships (p. 89); while C.J. Mackenzie, head of the NRC, did not get along at all well with George Wright in the development of RDX explosive (p. 113). Though he did not set out to do so, Avery helps explode the myth that the war against the Axis was a shining example of harmonious teamwork.

And the end of the conflict was not the end of the story, Avery noting that the Cold War would also call for the mobilization of science (p. 255), though on a different scale and organized in a different manner. Still, the previous conflict provides many lessons for the historian, including the role of scientific managers (p. 256), the need for the scientific community to create coping strategies to deal with Canada's "subordinate military status," (p. 258) the reality of relationships with the US and UK (p. 260), and, perhaps above all, the stresses war imposes on those who fight it and those who support the fighters. In his concluding chapter Avery quotes Frederick Banting, who as early as 1940 found that "It is hardly possible for one small brain to accomplish the various tasks I have set myself. But it is war." (p. 262) So it is.

Bill RAWLING
Directorate of History and Heritage, DND