

BOOK REVIEW

JUDITH SUMNER. 2019. **Plants Go to War**. (ISBN-13: 978-1-4766-7612-8, pbk). McFarland, Box 611, Jefferson, North Carolina 28640, U.S.A. (**Orders:** McFarlandBooks.com). \$49.95 US, 366 pp., bibliography, index, 7" × 10".

In the book's preface Sumner states, "My goal has been to write an encyclopedic synthesis of civilian and military plant uses and botanical connections as they relate to World War II ..." (2019:1). In including information from both Allied and Axis countries, her intent was to make a documentation as all-encompassing as possible, and I cannot argue that she failed. I would suspect that even for World War II historians and botanists familiar with the subject, a read through the Table of Contents alone might reveal at least one subtitle unfamiliar to them. Sumner provides copious endnotes for each chapter, an extensive bibliography, and the book is meticulously indexed. If there is one critique, it is that the print is small, but as it is already heavy to hold at 360 pages, a larger type, undoubtedly, would have made it unwieldy.

Sumner opens her volume by addressing the subject with which many of us are most familiar when thinking of plants and the war—with the need for civilians to produce as many fruits and vegetables for home consumption as possible in order for the government to concentrate on provisioning the military and allies in dire need. Farming had to be altered to include more plant-based foods that could be shipped long distances, and more plants from which various oils could be extracted for military uses. Cotton became the principle non-food crop vital to the U.S. military. Food rationing was an attempt to see that each citizen had a fair portion of necessary foodstuffs that was grown for civilian use, but some items were more severely limited than others. Coffee, sugar, chocolate, and chewing gum were considered vital to fighting troops. These largely came from the world's tropical regions, and required shipment over long distances through waters increasingly patrolled by Axis U-boats, so availability for civilian use was widely restricted, and substitutes, chicory and beet sugar, as examples, were sought out.

I will not dwell on Victory Gardens, allotments, and vast public and private spaces turned over to gardening, nor the informational booklets and classes dedicated to better crop management, garden pest control, food preservation in glass containers with non-traditional sterilization methods (metals, even pressure cookers, had to be confined to military use where at all possible). I will not summarize the vast need for rubber, wood (especially plywood), or plant-generated medicines Sumner documents in depth. I will, however, relay a few more esoteric tidbits of information she provides.

Most readers will be familiar with D-rations, specially formulated chocolate bars to provide energy for a relatively short period of time, and K-rations, designed to provide more balanced and longer lasting daily nutrition, including animal protein. These were both packaged to be lightweight, so the individual soldier or airman could easily carry a can in his uniform pocket. German soldiers were provisioned differently. Portable field kitchens moved with the troops. These contained a specially designed kettle that could cook and maintain the temperature of a kind of dense soup, Eintopf, made from some meat protein and a wide variety of vegetables. Germans relied on dehydration to preserve the vegetables that might be incorporated into these porridge mixtures. Eintopf was thickened by rye, soy powder, but also often by agar.

At the time of the war, Americans, soldier and civilian did not readily incorporate soybean products into their diets, as did the Japanese and Germans, even though the government mounted educational campaigns extolling it as an excellent source of protein. However, soy had many other wartime applications, not the least of which was the invention of the life-saving fire retardant, Aer-o-foam. Sprayed around the hulls of burning ships and airplanes, it snuffed out oxygen and prevented oils and fuels from combusting.

Agar was made of red algae, and was chiefly a product of Japan where it was harvested from waters around the eastern shores of Asia. Lack of access to Japanese agar proved to be a difficult problem for Allies. Agar was vital as a medium to culture microbes in food, blood, tissue, wounds, etc. It would be no exaggeration to say, in some part, the health of fighting troops depended on a supply of agar. Fortunately, the U.S., Russia, China, Australia, and New Zealand were able to find *Gelidium* spp. in their own ocean waters that were adequate substitutes for the species processed by the Japanese, and production quickly ramped up to meet military need.

In general, I cannot see Sumner's book having broad public appeal, and I feel that was not one of her purposes in writing it. It is not a book one is likely to sit down and read through in a few days. Because it is encyclopedic, it will be pulled off the shelf and used as a reference by historians and scientists, be they chemists, forestry specialists, medical researchers, and ethnobotanists, among many others. It is a must for libraries and research institutions of all kinds.—*Grace Lloyd Bascopé, Resident Research Associate, Botanical Research Institute of Texas, Fort Worth, Texas, U.S.A.*