

## BIOGRAPHY

# From Tacoma to Thermal Diffusion

Charles T. Prewitt

A combination of autobiography and biography, *Uncle Phil and the Atomic Bomb* offers an enjoyable perspective on Philip Abelson's amazing career. John Abelson (an emeritus professor of biology at Caltech) primarily based the book on manuscripts and other documents given to him by his uncle. He weaves these together with additional comments and explanations to describe Philip Abelson's life. The book chronicles Abelson's story from his Norwegian parents' immigration to America; through his early childhood and education in Washington state, graduate work at Berkeley, the discovery of neptunium,



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and wartime research; to his work on the atomic submarine. A couple of pages summarize his subsequent years at the Carnegie Institution of Washington, as editor of *Science* (1962–1985), and with AAAS.

The book is full of Abelson's interesting adventures. For example, like many young men during the Depression, he caught rides on freight trains. At first, these were local trips. But eventually he rode the rails east to attend the 1933 world's fair in Chicago, returning to Tacoma by way of the Dust Bowl and Los Angeles.

Completing his physics doctorate in 1939, Abelson then joined the Carnegie Institution's Department of Terrestrial Magnetism. After Germany invaded France, he decided to examine the feasibility of large-scale separation of uranium isotopes and, after a search of the literature, elected to explore liquid thermal diffusion.

Because of concerns about radioactivity contamination, his experiments were shifted to the National Bureau of Standards. There he synthesized 10 kg of uranium hexafluoride and

used it in a thermal diffusion column that successfully separated small amounts of  $^{235}\text{U}$ . Later, the project was transferred to the Naval Research Laboratory (for its high-temperature steam) and then to the Philadelphia Naval Base (which had even better facilities for uranium separation). The book describes a curious competition between personnel in the Army's Manhattan

Project and those at the Naval Research Lab. They eventually collaborated, and the Navy's liquid thermal diffusion plant in Philadelphia was duplicated at Oak Ridge. It provided  $^{235}\text{U}$ -enriched uranium for input to the electromagnetic and gaseous diffusion plants, which eventually produced substantial quantities of bomb-making material.

I very much enjoyed reading *Uncle Phil and the Atomic Bomb*. I met Abelson on a number of occasions during the years I was associated with the Carnegie Institution, but we never talked about his early days. It would have been wonderful to have known then the material described in the book, so that I could have asked more questions about his fascinating experiences.

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## Uncle Phil and the Atomic Bomb

by John Abelson and Philip H. Abelson

Roberts, Greenwood Village, CO, 2007.  
151 pp. \$25. ISBN 9780974707778.

## FILM: AGRICULTURE

# The Value of Women

Would you use fire to cut a man's hair? No. This admonition lies at the heart of Brice Lainé's documentary *La forêt danse* (*The Dancing Forest*). With just £6000 at his disposal, Lainé (a student at Ravensbourne College of Design and Communication, London) has made a remarkable film that tells the history of a home-grown development project in northern

Togo: Centre International pour le Développement Agro-Pastoral (CIDAP).

The founder of the project was a village man who not only recognized that the source of their many problems lay in their exhausted

land but also acknowledged the value of women as the primary guardians of the soil. CIDAP eschewed chemical fertilizers, likening their use to the futility of injecting blood

into a corpse to make it live. The project therefore focused its efforts on educating the women in sustainable husbandry and soil restoration techniques. The resulting collective of Bakoté women was overwhelmingly successful until it almost foundered under the weight of their illiteracy, which prevented them from expanding into larger-scale commerce. Nevertheless, because of the huge benefits the women and their families reap from the more fertile soil, the movement

persists despite threats from government officials and internal tensions. A poignant testimony came from one of the husbands, who simply declared he would be dead if it hadn't been for his wife's newly inspired efforts in their fields. I hope that this example of bottom-up development gives many governments pause for thought and also causes international agencies to rethink the ways they bestow benevolence.

—Caroline Ash

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## La forêt danse [The Dancing Forest]

by Brice Lainé

United Kingdom, 2008.  
76 minutes. In French and  
Nawdem with English  
subtitles.



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