tion of the dorsal horn, and the various ascending pathways in the cord and finally by an interesting survey of the sensory channels and descending control mechanisms. Each section is followed by a short summary and each chapter by a list of the main ideas and conclusions. Illustrations are used liberally and are, on the whole, well chosen.

For the present reviewers, more definite statements of the authors' own positions on the various topics of disagreement would have been interesting and useful. The authors have trodden very carefully in certain places, for example in their treatment of the substantia gelatinosa, where more forthright opinions would have been stimulating (even if they turned out to be incorrect). The cautious approach does, however, help to emphasize their many valid comments on the relationship of clinical studies on humans to the basic physiological and anatomical data from other mammalian species that make up most of our current knowledge.

The book will appeal to research workers, especially those just entering this exciting field, and teachers. Advanced students will also find the book most useful. It conveys the excitement that only authors who have been closely associated with some of the important developments in the field can transmit.

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Physicist's Memoir

What Little I Remember. OTTO R. FRISCH. Cambridge University Press, New York, 1979. xii, 228 pp., illus. $14.95.

"I am a lucky man!" Otto Frisch exclaims at the end of *What Little I Remember*. Lucky he was indeed; he lived in exciting times, and times that were particularly so for a physicist. Frisch's life span so paralleled the development of nuclear physics that his autobiographical account brushes on almost every phase of it. Frisch, furthermore, has a felicitous touch when it comes to explaining nuclear physics. His procedure in the book is essentially to alternate chapters that are almost purely autobiographical with chapters that are entirely concerned with physics. Naturally this method dictates a historical approach to the physics involved. His coverage is complete enough and his explanations clear enough that the didactic chapters by themselves constitute an adequate popular account of the development of nuclear physics.

A refugee from Hitler's Austria and Germany, Frisch, with his aunt Lise Meitner, was the first to work out the explanation of Hahn and Strassman's discovery of barium as a product of neutron bombardment of uranium. He even had the privilege of dubbing the process in question "nuclear fission" after he had experimentally demonstrated the high-energy recoiling fragments at Bohr's institute in Copenhagen. Then a little later in Britain, still fleeing the Nazi terror, he joined with other "enemy aliens" such as Peierls, von Halban, Simon, and Kowarski to rough out the first design of a bomb. The amount of uranium-25 they estimated such a device would require was small, and the estimate provided much of the impetus on both sides of the Atlantic for the tremendous effort that eventually produced nuclear explosions. Ironically, the German effort so much feared by the Allied scientists turned out to have been ineffective—leaving a question of moral responsibility for history to answer.

Frisch became a member of the "British mission" when in 1943 the English effort was joined to that of the Americans at Los Alamos in the attempt actually to assemble a bomb. He shows the scientists at Los Alamos working at a frenzied pace in selfless dedication to prevent the unthinkable catastrophe that might have occurred had the Germans succeeded with their own effort, which was known, through Niels Bohr, to have started much earlier. The experience of working in beautiful country with agreeable colleagues was, of course, not completely dreadful, particularly for a person who loved to play and listen to music and who loved good conversation. Frisch's account of his life with the Manhattan Project is similar in many ways to other memoirs and full of the nostalgia that wartime Los Alamosians feel for their sojourn there. Recent books and articles have been critical of this attitude and have insinuated that these people were heartless and amoral scientists who ignored the human suffering resulting from their efforts. Times change and so do attitudes. During World War II the scientists felt that they were working in a great common effort to save the world from the Nazi threat to civilization and to every principle of just government. With the announcement of the devastation of Hiroshima, however, Frisch (along with many others) felt "unease, indeed nausea." Years later, writing his book he regrets that scientists who "are trained to think objectively and dispassionately, an asset in making decisions of any kind," were not more involved in the decision-making.

It might be added that it was not for lack of trying on the part of the Los Alamos scientists that their involvement was not to be greater. Almost to a man they immediately organized themselves to educate the public in the danger presented by the new weapon, the probability of an arms race, and the unique opportunity presented by the new United Nations Organization to control the new force by international agreement.

Despite his modest title, what Frisch "manages to remember" is quite impressive. He loved to tell stories and his many vignettes of his associates (they include nearly every outstanding physicist who worked in nuclear physics) will be a valuable supplement to flesh out the sometimes arid accounts that have already been written. Historians, too, are lucky that Frisch managed to remember and to record so much before his death.

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(Continued on page 1106)