

THE NIELS BOHR ARCHIVE

Staff	Director	Erik Rüdinger (leave from 1 July 1989)
	Acting Director	Finn Aaserud (from 1 September 1989)
	Secretary	Helle Bonaparte
	Preservation	Judith Hjartbro
	Programming	Felicity Pors
	Scientific Staff	Hilde Levi
		Abraham Pais (also at Rockefeller University, New York)

General remarks

The Niels Bohr Archive (NBA) is a repository of primary material for the history of modern physics, pertaining in particular to the early development of quantum mechanics and the life and career of Niels Bohr. Having led an uncertain existence on the premises of the Niels Bohr Institute (NBI) since shortly after Bohr's death in 1962, it was established as an independent, self-governing institution under the Danish Ministry of Education in 1985, in connection with the centennial of Bohr's birth. After residing in inadequate space for a quarter century, it will shortly be moving into expanded and improved quarters kindly provided by the NBI. The move will make it possible to take better care of the NBA's collections, to expand in-house historical research, and to offer better working conditions for the many visiting researchers.

The core of the NBA's collections consists of Niels Bohr's scientific correspondence (6000 letters and drafts) and manuscripts (500 units). This material was catalogued and microfilmed in the early 1960s as part of the Archive for History of Quantum Physics (AHQP), the major part of which consists of 290 microfilms of historical collections from around the world; the AHQP was sponsored by the American Philosophical Society and the American Physical Society. As a result, the NBA became one of the founding repositories of the AHQP.

In addition, the NBA houses several historical collections that cannot be consulted in any other place. In connection with the NBA's establishment as a self-governing institution in 1985, the Bohr family donated Bohr's extensive private correspondence. The NBA also houses the equally extensive "Bohr General Correspondence," which contains letters that can be described neither as scientific nor private. There are also the papers of some of Bohr's closest colleagues, such as George Hevesy and Léon Rosenfeld. The NBA's extensive collection of photographs relating to Niels Bohr's career is an especially heavily utilized resource. There are also book, film, sound tape, and video tape collections of historical interest.

Activities in 1989

In September, Finn Aaserud, who worked at the NBA from 1980 to 1984, became Acting Director. He is replacing Erik Rüdinger, who is on a two years' leave.

A major task consists of completing the *Niels Bohr*

Collected Works, the first volume of which was published in 1972; the series is being published by North-Holland. It is planned to comprise eleven volumes, of which three remain to be published. Volume 7, *Foundations of Quantum Physics II*, edited by Jorgen Kalckar and Volume 10, which under the editorship of David Favrholt will deal with Bohr's extensions of his complementarity argument outside physics, are nearing completion. Volume 11, which will cover Bohr's other extra-scientific activities both internationally and within Denmark, will be edited by Finn Aaserud; work on this volume has barely begun. In the course of 1989 a Chinese edition of Volume 2 was published through the efforts of Professor Ge Ge in Beijing and supported by the Danish Sonning Foundation. A complete list of all the volumes was given in the last Activities Report.

Of the NBA's collections of papers only Bohr's scientific correspondence and manuscripts are now properly preserved, catalogued, and microfilmed. The move to larger quarters will make it possible to speed up such work on other collections. In 1989, the preservation of Bohr's scientific correspondence and the computer registration of his private correspondence was practically completed. The NBA is now seeking support to preserve and catalog other collections. As a particular project, we are beginning the preparation of an Addendum to Bohr's scientific correspondence which will consist of scientific letters not previously microfilmed.

In the first half of the year, Rüdinger continued taping historical interviews with scientists who collaborated with Bohr. Aaserud has completed his book,

Redirecting Science: Niels Bohr, Philanthropy, and the Rise of Nuclear Physics, to be published shortly by Cambridge University Press. Abraham Pais has practically completed his extensive Bohr-biography, to be published by Random House in 1990. And Carsten Jensen, who has also worked at the NBA, recently completed his Danish PhD thesis, “A history of the beta spectrum and its interpretation, 1911-1934,” which will be evaluated in the spring. All of these are based heavily on research at the NBA.

In the course of the year, several researchers have visited the NBA. Aside from scholars doing research for books and articles, two film teams – from the Soviet Union and the United States – have visited to shoot historical films respectively on the Soviet physicist Lev Landau and on the momentous debate about quantum mechanics between Bohr and Einstein. Incidentally, during 1989 Lars Becker-Larsen also completed his film on the American physicist John Wheeler, for which he did research at the NBA.

Publications

Gustaf Arrhenius and Hilde Levi, “The Era of Cosmochemistry and Geochemistry 1922-1935” in György Marx (ed.), *George de Hevesy 1885-1966: Festschrift* (Budapest: Akadémiai Kiadó, 1988).

Abraham Pais, “Physics in the making in Bohr’s Copenhagen” in A. Sarlemijn and M.J. Sparnaay (eds.), *Physics in the Making* (Amsterdam: Elsevier Science Publishers

BV, 1989), pp. 45-91.

Erik Rüdinger, "Bohr's Double-Slit Experiment – Once Again!" in *Physica Scripta* 39 (1989), 545-546.

Erik Rüdinger, "Bohrs dobbeltspalte-eksperiment – for sidste gang?" in *Gamma* no. 77 (Nov. 1989), 15-16.