

# THE NIELS BOHR ARCHIVE

## Annual Report 2012

The Niels Bohr Archive is an independent institution under the University of Copenhagen

---

### Staff:

Director	Finn Aaserud
Academic Assistant	Felicity Pors
Librarian/Secretary	Anne Lis Rasmussen

### Board of directors:

For the Vice-Chancellor of the University of Copenhagen	Karin Tybjerg
For the Niels Bohr Institute (NBI)	Andrew D. Jackson, chair
For the Royal Danish Academy of Sciences and Letters	Jørgen Christensen-Dalsgaard
For the State Archives, ( <i>Rigsarkivet</i> )	Asbjørn Hellum
For the family of Niels Bohr	Vilhelm Bohr

---

### General remarks

The Niels Bohr Archive (NBA) - website [here](#) - 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. Although the NBA has existed since shortly after Bohr's death in 1962, its future was only secured at the centennial of Bohr's birth in 1985, after a deed of gift from Bohr's wife, Margrethe, provided the opportunity to establish the NBA as an independent not-for-profit institution. Since 1985, the NBA has had its own board of directors and has received a fixed annual sum, covering part of the running expenses, from the Danish Ministry of Education (1985-1998 and 2000-2001), the Ministry of Research (1998-2000) and the Ministry of Science, Technology and Innovation (from 2001); it has supplemented its income by using of its privilege to apply for project support from private sources. In 1985 the NBA had only a couple of offices, its archival collections were scattered in various rooms and the unique book collection was stored in boxes. Since then, the Niels Bohr Institute has provided the NBA with office space, library rooms and storage space for the archival collections. This has given better possibilities for the NBA staff to place archival documents in an acid-free environment in fireproof safes, to register the collections and to service the many guest researchers.

The core of the collections comprises Bohr's scientific correspondence (6,000 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), a project sponsored by the American Philosophical Society and the American Physical Society - website [here](#). The outcome was 290

microfilms of various relevant historical material, which have been placed in several repositories world-wide, including the NBA.

In addition, the NBA houses several historical collections that cannot be consulted elsewhere. Thus, in 1985 the Bohr family donated the bulk of the *Bohr Private Correspondence* (BPC) which includes letters to and from central personalities in culture and politics inside and outside Denmark. The equally extensive *Bohr General Correspondence* (BGC) documents Bohr's substantial administrative involvement, whereas the *Bohr Political Papers* (BPP) shed light on his considerable effort, beginning during the Second World War, for an "open world" between nations.

Among papers of Bohr's closest colleagues deposited in the NBA, only the George Hevesy Scientific Correspondence has been microfilmed, but the papers of among others: H.A. Kramers, Christian Møller, Oskar Klein and Léon Rosenfeld are also of great historical interest. Some papers of more recent origin - notably those of Niels Bohr's son, Aage Bohr, of Niels Bohr's close collaborator, Stefan Rozental, and of Danish solid state physicist, Allan Mackintosh, - have also been deposited. Finally, the NBA houses photocopies of the papers of astrophysicist Bernard Peters and the papers of *Selskabet for Naturlærens Udbredelse* (SNU, the Danish Society for the Dissemination of Science, founded by H.C. Ørsted in 1824). The large collection of photographs relating to Bohr's career, thumbnails of which can be seen on the website, is an especially popular resource. Finally, there are reprint, film, sound tape, video tape and DVD collections, as well as a growing library.

From 2007 to 2012 the Danish Ministry of Science supported a pilot project to find and to begin using the best means to make information about the NBA's collections and selected documents in them, available on the Internet. In the first stage of this project, all the documents in the BPP as well as the majority of the NBA's films and sound recordings were digitized and placed on the Internet. In a second stage, the major part of BPC and a supplement to the *Bohr Scientific Correspondence* (BSC-Supp) were added. The digitization of archival documents has continued and the resulting files placed on the Internet, where they can be accessed by means of the Archon archives software developed at the University of Illinois. Web address [here](#)

The main priority of the NBA practically since Bohr's death has been the publication of the *Niels Bohr Collected Works*, the first volume of which was published in 1972 and the last (Vol. 12) in 2007. A new edition of the entire series was published in 2008 with an additional volume containing a cumulative subject index. A list of the volumes is posted on the NBA website [here](#).

After the completion of the *Collected Works* the NBA is able to conduct limited independent historical research as well as to provide greater service for the many researchers making use of its collections, and to concentrate on its activities, instituted in early 1999 upon consultation with the Ministry of Research, to disseminate natural science for the public, particularly gymnasium (high-school) students.

After several years of negotiations, as of 1 January 2012, NBA is an independent institution under the supervision of the University of Copenhagen. New statutes have been approved and a new board of directors, with a representative from the Danish National Archives (*Rigsarkivet*) replacing the representative of the Danish Ministry of Science, Technology and Innovation, has been appointed. In connection with NBA's new status, the Ministry agreed to increase the annual support provided through the University of Copenhagen to cover fully the salaries of its small staff and day-to-day

expenses. This means that NBA no longer needs to rely on external support for its survival, which gives substantial freedom to apply for funding for new and innovative archival, historical and outreach projects.

### **Activities in 2012**

Two of the dearest friends and strongest supporters of NBA, the physicist Jørgen Kalckar (b. 1935) and the philosopher David Favrholt (b. 1932) died in the course of the year. Kalckar was editor of Vols. 6 and 7 of the *Niels Bohr Collected Works*, while Favrholt, who also served on the NBA board of directors from 1989 to 2001, edited Vol. 10.

Efforts to obtain funding for conservation and registration of the archival material damaged during the heavy rainfall in July 2011 (see the annual report for 2011) have proved unsuccessful. The worst affected material (12 out of 140 large cardboard boxes) has been submitted for professional conservation, the expenses being covered through NBA's regular operational account.

The work to scan and make digitally available to researchers BSC-Supp as part of NBA's digital database Archon has been completed. The family of the experimental physicist N.O. Lassen (1914-2008) has lent Lassen's letters to his parents from 1932 to 1954 to NBA. The letters are being scanned and prepared for inclusion into the digital database, from where it is hoped that they will be made available to researchers upon agreement with the Lassen family.

NBA has received ten large cardboard boxes of mostly unorganized archival material from the home and the office of Niels Bohr's son and Nobel Prize winner, Aage Bohr (1922-2009). There are presently no resources to conserve and organize this important material.

Aaserud has interviewed the Norwegian physicist Sven Oluf Sørensen (b. 1920), primarily about Sørensen's conversation with Niels Bohr in Oslo just before the German invasion of Denmark and Norway in 1940. On that occasion, Bohr made drawings for the young student, which Sørensen has since kept and which he has now donated to NBA, where they will be conserved and made available to researchers. The interview with Sørensen has been transcribed.

Aaserud also started an interview with the 99-year old Danish industrialist Haldor Topsøe, when Topsøe visited NBA in connection with his contribution to the book *Bohr på ny*, to be published in 2013 (see below).

The sound recording of Bohr's last lecture (at the Lindau conference for Nobel Prize winners in 1962) has been deposited at NBA by the Swedish physicist and former member of the Nobel Committee for Physics, Anders Barany. NBA has helped with the transcription of the interview, which will be made available on the NBA website together with the contemporary description of the event by Bohr's grandson, Christian Bohr (b. 1948), who accompanied Bohr on the journey.

In connection with the planned sale by the Bohr family of Niels and Aage Bohr's private book collections, NBA has digitally photographed front pages and pages with handwritten notes in the books. The photographs will be made available to researchers.

There have been five lectures in NBA's popular history of science seminar, held, in chronological order, by Matthias Heymann (University of Aarhus), Roland Wittje (University of Regensburg, Germany), Olival Freire (Federal University of Bahia, Brazil), Erik Høg (University of

Copenhagen), Henrik Zinkernagel (University of Granada, Spain), and Henry Nielsen (University of Aarhus).

There have been 107 individual visitors, three of them - Sumei Chang (Shanghai, China), Henrik Zinkernagel (Granada, Spain) and Luis J. Boya (Zaragoza, Spain) - longterm. Some 21 high school classes or other groups have visited as part of NBA's dissemination programme. NBA has also contributed to the well-attended arrangement at the Niels Bohr Institute on the annual *Kulturnatten* (Culture Night) in Copenhagen.

The Chinese edition of the *Niels Bohr Collected Works* has been published in a new edition, including Vols. 11 and 12, which the Chinese professor Ge-Ge (1922-2007) was able to translate before he died, but were not published as part of the first edition.

Anja Skaar Jacobsen's book, *Léon Rosenfeld: Physics, Philosophy, and Politics in the Twentieth Century*, based on several years of research at NBA, has been published by World Scientific, Singapore.

Aaserud has given a talk at the Saxo Institute at the University of Copenhagen at a conference dealing with Danish academics' reaction to the German occupation of Denmark during the Second World War, which will later be published in the Proceedings of the conference.

Aaserud has also contributed to a roundtable conference at the Max Planck Institute for the History of Science in Berlin celebrating the 50th anniversary of the first publication of Thomas S. Kuhn's pathbreaking book, *The Structure of Scientific Revolutions*.

The preparations for the 2013 celebrations of the centennial for Niels Bohr's atomic model continue. NBA has prepared a celebratory wall calendar in collaboration with the American Institute of Physics' Center for History of Physics and has been closely involved in the preparation of two short films relating to the centennial.

Work continues on the book, to be published by Oxford University Press, based on the correspondence between Niels Bohr and his fiancée Margrethe Nørlund between 1910 and 1913. Sufficient support has been obtained for the preparation of the book *Bohr på ny* to secure its publication. The grant provided by the Carlsberg Foundation at the end of 2011 has made possible the continued preparation of an international history of science conference on Niels Bohr's life and work next year.