

Foreword

On the occasion of the centenary of the birth of Niels Bohr, the Royal Danish Academy of Sciences and Letters herewith publishes 16 treatises, where the »Niels Bohr Stipendiater« of the Academy give accounts of the main themes and progress of their work. The papers are presented in two separate volumes, of which Part One concerns the exact sciences and geology, while Part Two comprises the biological sciences.

This introduction to the two volumes is intended to describe both the background for the creation of the Niels Bohr Fellowships and the manner in which the Academy has supported the work of the Niels Bohr Fellows.

The general background is connected with the economic recession in Denmark during the last decade. As a consequence of the recession, Danish universities were subjected to annual reductions in their budgets, which has led to an increasingly difficult situation for basic research. Numerous temporary or part-time positions have been abolished as have new positions. Vacancies due to retirement have not been filled, and it became hard to obtain support for new equipment. The outstanding feature of the mounting crisis has been the lack of renewal in the scientific community, within both the natural sciences and the humanities. Many of the young, talented researchers have had to give up their scientific career, or to leave Denmark, because no university positions were available.

In 1981 early preparations for the Niels Bohr Centenary were started at the Niels Bohr Institute. It seemed natural to hope for some economic support from wide circles within Danish society. The industrial leader Dr. Haldor Topsøe was one of the first prospective donors to be contacted by Aage Winther from the Institute. Dr. Haldor Topsøe asked which problem at the Niels Bohr Institute was the most urgent one. When it was realized that the need was primarily the recruitment of young, talented physicists, the idea of research fellowships came into focus. Since the problem was a general one, not limited merely to physics, and since it would be in the spirit of Niels Bohr's conception of the Unity of Knowledge to regard all sciences as one common venture, it became clear that the fellows, Niels Bohr Fellows, ought to belong to all fields of basic science. Moreover, because of the urgency of the problem,

it was deemed necessary to establish the fellowships as soon as possible. Finally, the funds collected from private sources and the resulting fellowships could hardly be given directly to the government and channelled through the ministries to universities and research institutes. Being an independent institution, the Royal Danish Academy of Sciences and Letters became a natural choice for the guardian of the fellowships. In this way one also hoped to encourage the Danish government to reconsider seriously the problem of recruitment and renewal in the sciences.

In the winter 1981/82 the Niels Bohr Stipend Committee was set up, comprising three prominent citizens, Mr. NIELS ARNTH-JENSEN, Director of F. L. Smidth & Co., Ltd., Dr. ERIK HOFFMEYER, Director of the Danish National Bank, and Dr. HALDOR TOPSØE, Director of Haldor Topsøe, Ltd., as well as two scientists of renown, BENGT STRÖMGREN and H. H. USSING. Aage Winther acts as Secretary to the Committee, while Christian Crone and Ben Mottelson were advisors during its initial work.

The five Committee Members made contact with a number of companies, banks, and private foundations, and within a few months a total sum of some 12 mill. D.kr. was raised by a concerted effort. This remarkable result was due to the immediate and positive response from the following donors:

THE AUGUSTINUS FOUNDATION
 BIKUBENFONDEN
 DANFOSS, LTD.
 DEN DANSKE BANK
 THE DANISH SUGAR CORPORATION
 THE EGMONT H. PETERSEN FOUNDATION
 THE F. L. SMIDTH & CO. DONATION FOUNDATION
 HAFNIA HAAND I HAAND
 HALDOR TOPSØE, LTD.
 THE KNUD HØJGAARD FOUNDATION
 COPENHAGEN HANDELSBANK
 THE NOVO FOUNDATION
 PRIVATBANKEN
 THE ROCKWOOL FOUNDATION
 FOUNDATION OF SCANDINAVIAN TOBACCO COMP.
 SPAREKASSEN SDS
 THE THOMAS B. THRIGE FOUNDATION
 THE TJÆREBORG FOUNDATION
 THE TUBORG FOUNDATION

It was assumed that fellowships should be for a period of about three years. Therefore, the amount of 12 mill. D.kr., paid by the donors in three yearly instalments, would suffice for the payment, including overheads, of more than a dozen fellows. However, the number of fellows could not be immediately fixed, due to uncertainty with regard to inflation and salary changes.

The Niels Bohr Stipend Committee asked the Academy to take over the responsibility for the funds as well as for the selection and care of the Niels Bohr Fellows, stipulated to all be within the natural sciences. The Academy accepted this responsibility at its meeting on April 15, 1982, where a Steering Committee was elected. The Committee has the following members:

Erik Dal, editor
Jes Forchhammer, secretary
Jens Lindhard, chairman
Ove Sten-Knudsen
Henning Sørensen
Aage Winther.

Mr. Hans Kloch, Head of Department, The Danish National Bank, acts as associated member of the Steering Committee and accountant of the funds. His assistance, foresight, and the apparently effortless way in which he has taken care of the funds, are highly appreciated by all.

The fellowships were proclaimed open for applications within the natural sciences, by younger scientists who, although suitably qualified, had not yet acquired a permanent position at a university or research institute. In response, and to our surprise, as many as 130 applications for fellowships were received. It turned out that most of the applicants were well qualified for the fellowships. This large number of candidates clearly showed the need for further openings for promising scientists.

The Academy had already selected a group of members who were to evaluate the applicants: Svend Olav Andersen, Hans Jørgen Hansen, Kjeld Marcker, C. Overgaard Nielsen, Morten Simonsen, Ove Sten-Knudsen, Diter von Wettstein, Thor A. Bak, Ove Nathan, Gert Kjærgård Petersen, Henning Sørensen, and Poul Erik Nissen.

In consequence of the careful and rapid work of the evaluation group, the Steering Committee could finally propose 16 candidates for Niels Bohr Fellowships. This number of fellows is somewhat larger than originally expected, the reason for the increase being that, in Denmark, the rate of inflation was gradually becoming less serious. The Niels Bohr Fellows are:

Lars Døvling Andersen
Torben Dabelsteen
Thomas Døssing
Else Marie Friis
Jørgen Frøkjær-Jensen
Preben Bach Holm
Claus Schelde Jacobsen
Hans Plesner Jakobsen
Jens Kirkeskov Knude
Jens Konnerup-Madsen
Birger Lindberg Møller
Peter Eigil Nielsen
Hans Uffe Petersen
Jon Steen Petersen
Irene Shim
Hans Lomholt Skriver.

The candidates commenced their fellowship at the earliest opportunity, most of them in the beginning of 1983. Since that time, the Niels Bohr Fellows and the Steering Committee have met regularly in the Academy and in various research institutes, at which meetings the fellows have given accounts of their work in colloquia, and practical problems have been discussed. In particular, subject to approval by the Steering Committee, each fellow has at his disposal an overhead of some 25.000 D.kr. per year, for purchase of scientific equipment, for travels, for guests, etc. Several of the Niels Bohr Fellows have used a considerable part of their fellowship abroad, mainly at research institutions in the US.

Since the Steering Committee has to take care of the fellows in many ways, economic as well as scientific, there has been a close contact with all fellows. Here, Jes Forchhammer, as secretary of the Steering Committee, and Erik Dal, as editor, have been responsible for a sustained and impressive effort.

During the last year, a number of fellows have acquired tenure positions. Although they no longer receive a salary from the Academy, they still continue as Niels Bohr Fellows in all other respects. Partly because of the consequent savings of salaries, the remaining fellowships can be prolonged somewhat beyond the stipulated three years.

All who have taken part in it, have felt the success of the small scientific community formed by the Niels Bohr Fellows. The external mark of the efforts of this community is to be found in the present two volumes, published on the centenary of the birth of Niels Bohr, and

containing accounts of their scientific work by all of the fellows. The publication of the two volumes is one proper way of expressing our gratitude, primarily to all donors and to the Niels Bohr Stipend Committee, but also to all others who have contributed to the success of the Niels Bohr Fellowships. At the same time it is hoped that the two volumes show that scientific work and collaboration in the spirit of Niels Bohr still continues.

JENS LINDHARD.
President of the Academy.