

Project description: *Navigator - Johannes Schmidt, ICES and the Carlsberg Laboratory, c. 1898-1933*

”Science recognizes no boundaries, no class and no creed, all working to a common end, to increase knowledge and to uplift humanity.”

A paradox

Such noble words were uttered by Danish oceanographer, research entrepreneur and longtime Head of the Physiological Department of the Carlsberg Laboratory in Copenhagen, Johannes Schmidt. The occasion was a public lecture in Sydney at the Royal Society of New South Wales, and Schmidt was the guest star of the evening, speaking as the chief designer and leader of the 1928-30 “Carlsberg Foundation’s Oceanographic Expedition Round the World” (Royal Library, Man. Coll. 347). At the pinnacle of his career, Schmidt orchestrated the World’s first global expedition on marine biodiversity and biogeography. While it may sound like a simple truth that ‘all are working to a common end in science,’ the picture emerging from looking back at Schmidt’s accomplishments during the first third of the 20th century is complex to say the least.

Several Western countries were launching landmark oceanographic endeavours at the time, such as the British and Norwegian Polar expeditions, or the German effort to measure the depth of the South Atlantic Ocean. What set the Danish effort apart in the race to chart the seas of the World was the dedicated focus on marine biology and especially one question, the life history of the eel. Johannes Schmidt conceived and executed a research plan which should be recognised and studied as one of the world’s first Big Science initiatives. The life and work of Johannes Schmidt demonstrates the complex historical role of public-private partnership in science, and the equally intricate role of science in the context of society at large. It is therefore of central importance to the discipline of the history of science to understand the background, execution and implications of his work.

Schmidt’s initial claim to fame was the discovery in 1904, of the first eel larvae (*Anguilla anguilla*) observed in the Atlantic Ocean. By the early 1920s Schmidt’s persistent work at sea and in the Carlsberg Laboratory had resulted in the discovery of the Sargasso Sea as the breeding place for Atlantic eel (Winge & Vedel Tåning). Schmidt’s effort was crowned by the abovementioned global expedition, and in spite of Schmidt’s death in 1933, before most of the findings were sorted, the 91 reports published on the basis of the expedition testify to the subsequent impact. From the point of view of international research cooperation and infrastructure, Schmidt’s involvement as the Danish representative in the International Council for the Exploration of the Sea (ICES) is a key to unlocking the past functioning of global oceanography.

Schmidt however, was not supposed to be working on this, since from 1910 until his death he served as Head of the Physiological Department of the Carlsberg Laboratory in Copenhagen. His professional assignment at the laboratory was to work for the common end of ‘promoting the production of beer’ (Carlsberg charter), where relevant topics would involve areas like fermentation processes of yeast or the breeding of hobs. The far flung fecundity of eel hardly fitted the formula.

The project will investigate if what seemed like an institutional boundary formally excluding Schmidt from investigating the ocean, may in fact have provided a very significant institutional framework for the success of some very costly, complicated and long-lasting research investigations in oceanography. The project investigates the significance of this *accidental institutionalization*, which seems to have been vital, since global scale oceanography as a field study was and is a very large-scale operation. Equipping a research vessel with sophisticated, often custom-made instruments, scientists and able-bodied seamen as well as provisions to be away for months, even years, at sea comprised a huge expense by the standard of any scientific enterprise. This point strongly towards the concept of Big Science, normally associated with nuclear physics of WWII and beyond (Galison & Hewly). Schmidt’s oceanographic research bore similar characteristics.

Another line of inquiry will be the role of other sponsors for Schmidt's research activities. Persuading the Danish state to enrol navy vessels is one thing, envisioning and setting up collaborative research efforts with scientists from various disciplines around the globe is another challenge. What has been largely overlooked so far is how Schmidt also, throughout his career, was able to commit other private companies for his cause such as The East Asiatic Company. While Schmidt's work in marine science is still referred to (Sinclair), and his connections with Carlsberg are mentioned in passing (Rozwadowski), almost nothing has been written on the topic of this proposal. The Carlsberg Laboratory received the attention of a centennial anniversary volume in 1976 (Holter & Max Møller), while the latest book on the history of Danish oceanography appeared in 1967 (Wolff).

Methodologically and empirically, the project will add to the current state of knowledge within the history of marine science and marine environmental history. While recent research in early 20th century history of science has investigated links between science, business (e.g. the fishing industry) and management, (Poulsen) this project is 'a first' by investigating the role of research politics, institution building and the emergence of public-private sponsorship for the success of large-scale research in the first third of the 20th century.

Research questions

1. What were the sources of funding for Schmidt's research activities, c. 1898-1933?
2. What were the scientific, institutional, national and socio-economic justifications for the awarding of the diverse grants?
3. Did Schmidt's research impact the image of his private and public sponsors?
4. What was the role of institutions such as ICES in the coordination of Schmidt's research?
5. What have been the scientific impacts of the results of the research funded by the Carlsberg Foundation and conducted by Schmidt, both in relation to oceanography and beer production?
6. Was the Carlsberg Foundation's subsequent funding strategies negatively impacted by the funding of Schmidt's research?

Deliverables and feasibility

Products will include a book-length manuscript in English intended for a peer-reviewed academic book series, as well as one or more scholarly papers. The project is feasible through the exploitation of c. 200 archival boxes at Danish archives (Royal Library, Carlsberg Archive and Rigsarkivet) as well as the scientific works (138) of Johannes Schmidt and his contemporaries (e.g., Bruun).

Bibliography

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