Research Topics

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Microscope Slides: An Object of the History of Science?

The Rediscovery of a Historical Resource

By Hannah Lotte Lund

Microscope slides, the glass plates on which small objects are fixed for microscopic observation, are standard tools of working and teaching in the life sciences. But what is their significance for the history of science?

The International Max Planck Research Network "History of Scientific Objects" has set itself the task of investigating the material culture of the history of science on the basis of selected objects. This includes rediscovering objects of interest for the history of science, which could be everyday objects in various sciences. In this context a project was initiated for the dual purpose of studying microscope slides as objects of the history of science, and of raising awareness that seemingly unimportant objects in everyday research work can be relevant for the history of science. In a series of workshops historians of science and curators pursue the question: How much history of science is encapsulated in two square centimeters of glass? Their initial findings are presented on a web site.

Slides appear at first glance to be "lost objects": As a material for scientific work, most collections of slides are discarded upon the conclusion of research, and much of the glass material that did survive was destroyed in war. In Berlin, Professor Ilana Loewy, the initiator of the project on "Microscope Slides", finally found

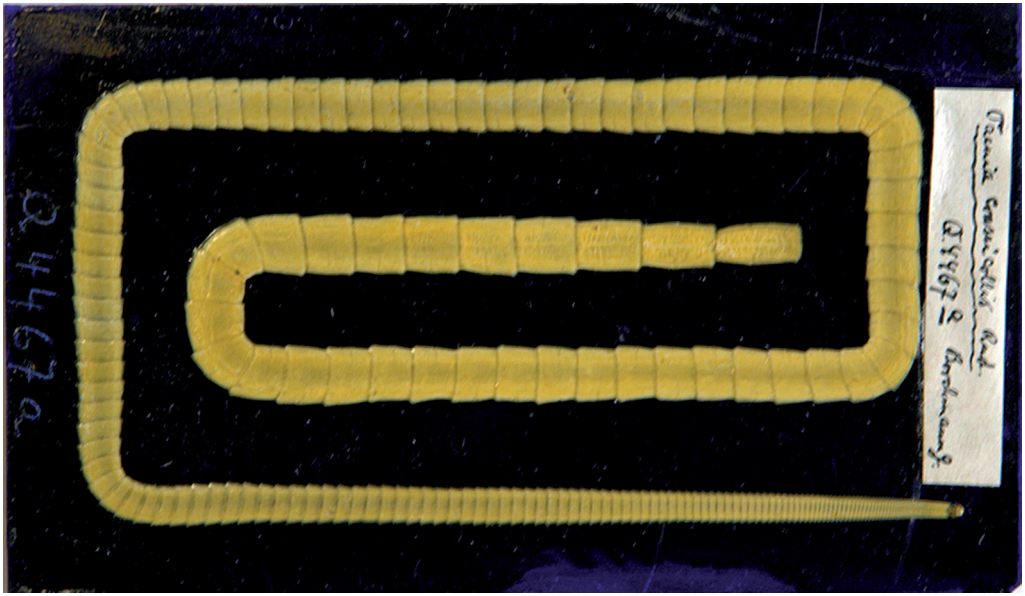
what she was searching for in various museums and research institutions: The Collection of the Zoological Institute of the Humboldt University Berlin, for instance, contains not only skeletons, wall charts and models, but about 30,000 microscopic specimens, including a collection of cross-sections of deep-sea sponges; the embryological collection in the Museum für Naturkunde, the home of the Hubrecht & Hill collection of embryos since 2004, contains around 80,000 histological specimens, which are consulted by scientists all over the world studying issues of morphology and developmental biology; and the Vermes collection at the same institution, which consists of 30,000 slides, including outsized slides probably used in private showrooms.

Consequently, the "History of Scientific Objects" Research Network joined up with its partners in Berlin to organize an interdisciplinary workshop featuring hands-on sessions. The collections with slides turned out to be "treasuries" for the history of scientific objects. This description also applies to connections between slides and other objects, as for an embryological collection that shares a room with tiger furs, and for the cross sections in the original cupboards of the Hubrecht laboratory that were stored between massive cattle skulls. As fascinating as the variety of the formats and forms of storage are these collections' connections with other objects like photographs and drawing apparatus, as, for instance, Ziegler's wax models on the development of beetles, which were constructed on the basis of drawings from microscopic specimens.

But the history of the collection itself can also provide information about the scientists' work. Many collections are documented in such detail that the catalogs allow the price and value of the work to be inferred, along with the international collaborations that emerged to facilitate the purchase and scientific exchange of a special object. In the late nineteenth century, for example, pathologists circulated slides worldwide in order to halt the spread of yellow fever through faster diagnosis.

The questions posed by the participating scientists at the workshop were addressed both to the individual carriers of objects and to collections of slides as sources for the history of science: What was their value for the producer, how were the collections – often numbering several tens of thousands of objects – stored and documented? Do they still have a purpose today? The workshop made clear that slides are more than mere neglectable remains in the history of science. They can be particularly informative for biographies of scientists, as witnesses of everyday life in the laboratory, but also as objects of prestige: particularly beautiful or rare slides were framed as trophies of the hunt for microbes and presented as gifts. Slides can be used to show how an apparently outdated object can yield new results when contemporary research methods are applied, as when histological sections are consulted for DNA analysis or digitalized photographs of historical slides combined to construct virtual models.

The second workshop, organised in Paris, in co-operation with the Institute Pasteur, consequently asked for the relevance of slides-collections in the modern world, from an aesthetic and political perspective. Electronic imaging



Oversize Slide of a tapeworm, Vermes Collection of the Natural History Museum Berlin (Photo: Jan Kaminksi).

and slides and analogies of slide collections and bio banks. Ethical question came up, not only in connection with the history of science during National socialism – the problem how to deal with the remains of euthanasia-victims, which had often been still in use for research in the 1980ies, caused hot debates in Austria and Germany over the last decades. Also the more recent debates in Britain on ownership laws of human tissue, including slides, led back to the more general problem on whether slides can be objectified.

For the participants of the workshops, slides became interesting as an epistemic object, because of their ambivalent status between object and illustration. At the same time they are discussed as raw material and as scientific result, conserving not only parts of an original, but also the research work that transformed this original into a scientific object. The research papers on the complexity and ambivalencies of this object will be continued in a collective publication on a web site available for immediate access.

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