Acta Baltica Historiae et Philosophiae Scientiarum
Vol. 3, No. 1 (Spring 2015)
DOI : 10.11590/abhps.2015.1.08

The 33rd Symposium of the Scientific Instruments Commission in Tartu

Lea Leppik

University of Tartu Museum
Lossi 25,
Tartu 51003, Estonia
E-mail: lea.leppik@ut.ee

On 25–30 August 2014, enthusiasts of the history of scientific instruments from all around the world assembled in Tartu. For a week, the University of Tartu Museum hosted the 33rd Symposium of the International Scientific Instruments Commission. The International Scientific Instruments Commission is a sub-organization of the International Union of History and Philosophy of Science (IUHPS), with the goal of propagating and aiding research of the history of scientific instruments and of helping to maintain and record collections of instruments. Symposiums of the Scientific Instruments Commission are held every year and a location chosen where there are significant collections of scientific instruments or research and learning centres.

The main organizer this year was the University of Tartu Museum. There were over 80 participants from 18 countries; the topics covered ranged from the Middle Ages to the Space Age. The main focus was on drawing the attention of the wider audience to the history of scientific instruments, the uses of old instruments in modern education or in popularizing science. In addition to the old glass and brass instruments, newer and often less attractive instruments that tend to be troublesome for the museum due to their too large or small sizes, were under examination. Instruments have never stood alone; their devise has always been related to certain needs, to find solutions to questions of scientists and the society. Alternatively, an effective instrument allows posing questions that could not have been raised before. The history of scientific instruments is directly related to science, technology, trade and handicraft, it has points of tangency with music, literature and art, and all of these topics were covered in the presentations as well.

The speakers, for example, shared their experiences on how to apply the analysis of the work principles of historical instruments and the building of copies to

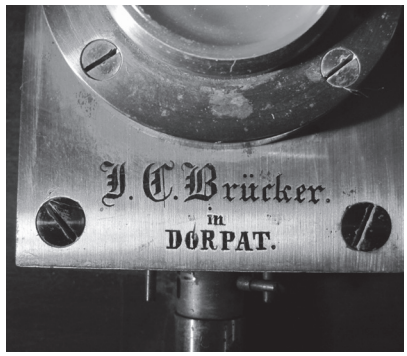

Figure 1. The maker's mark of the legendary instrument-maker Johann Christian Brücker (1798–18??), who worked at the University of Tartu for half a century (1824–1874).[1] Photo by J. Laidla.

Figure 2. The label of the experimental workshop of the University of Tartu.[2] Photo by J. Laidla.

educate younger generations in the basics of classical physics. Attention was drawn to the possibilities how knowledge of the history of scientific instruments can be utilized to stimulate economic growth and innovation, create new jobs and strengthen the common identity of Europe. The history of science is inevitably international and museums are political institutions, as was said by M. P. M. Weiss from Leiden. Museums of universities have mostly found their place within their respective university first and foremost as a means to achieve the so-called "third mission" of universities—that is, to communicate with the wider audience, who might not necessarily be scientists. Somewhat controversially, attracting students to visit the museum has proved the most

[1] Brücker came from Suure-Kambja manor, studied three years (1812–1815) at the Tartu district school, was an apprentice under the former university master craftsman B. Politour, and subsequently received further training in St. Petersburg. As a mechanic, he was in charge of all the necessary repairs, the production of thermometers, barometers, and instruments required for experiments in physics and chemistry, as well as the maintainance of clocks and the fire pump.

[2] Building the necessary equipment locally at the university continued after the establishing of Estonian University of Tartu in 1919. After the Second World War, the university workshop grew into a university-wide experimental and study lab (2 workers at the time of the Republic of Estonia, 20 workers in 1961, and more than 130 engineers and practitioners at the time of closing in 1995). The lab was managed by Jaan Muuga from 1947 to 1968 and by Ado Jaagosild from 1968 to 1995. The demand for locally and custom-built apparatuses grew especially in the field of medicine. Professors L. Schotter, A. Kallikorm, T. Karu and Doctor T. Sulling were well known for their inventive activities. In 1970, a group of Estonian authors (A. Jaagosild, E. Kõo, Ü. Lepp, V. Mandel, J. Samarüütel, E. Teeäär, led by Professor A. Kliiman) were given the Soviet Estonia Prize for developing the necessary surgical equipment for treating cardiovascular diseases.

Besides the University of Tartu, other scientific research establishments in Estonia, Latvia, Lithuania, and the bigger centres of the Soviet Union—Moscow, Leningrad (St. Petersburg), and Kyiv—ordered some of their equipment from the experimental lab of the University of Tartu.

Figure 3. At the opening event of the exhibition "The Art of Understanding Nature", Professor Georg Friedrich Parrot welcomed the guests. Photo by A. Tennus.

difficult task for museums of universities. Positive experiences were shared by the University of Gent, where students regularly write bachelor's theses on subjects suggested by the museum and based on their collections.

Related to Estonia, at least three presentations mentioned the Fraunhofer telescope, situated in the observatory of Tartu, which in its time (it was received in Tartu in 1824) caused a revolution in astronomical science. From Estonia, there were four presentations: Epi Tohvri talked about scientific contacts of G. F. Parrot ('Travelling knowledge and instruments: George Frederic Parrot's international scientific network in the first half of the 19th century'); Valdur Tiit discussed vacuum ultraviolet monochromators made in Tartu during the Soviet era to calibrate space technology; Toomas Pung spoke about historical gas meters of the chemistry laboratory in the University of Tartu Museum; and Tullio Ilomets explored the oldest definitively dated instrument in the museum, an assay balance manufactured in Köln in 1560 ('Early assay balance at the University of Tartu Museum').

The University of Tartu Museum displayed a selection of significant scientific instruments from their collection. For the symposium, an open storage of pharmacy instruments and two exhibitions were prepared. The exhibition "Made in Tartu" introduced scientific instruments built or invented in Tartu, local research topics and processes and people's tales related to these (Figs. 1 & 2). To the great

joy of the museum, the exhibition brought additions to the collection—several inventors thereupon offered the museum items they had designed and constructed themselves. The second exhibition was called "The Art of Understanding Nature" and presented one of the most valuable collections owned by the University of Tartu Museum—the early nineteenth-century collection of Georg Friedrich Parrot's scientific instruments (Fig. 3, see on p. 115). For the first time, the part of the collection already in the hands of the museum and the part of the collection that was until then still on display (and partly in everyday use) at the Institute of Physics were brought together. The collection was placed in a context to present the spirit of the time (late Enlightenment) as much as possible. A great opportunity for this was G. F. Parrot's six-volume work *Entretiens sur la physique*, a popular textbook written in the form of a play, which gives an overview of all the main problems of physics at the beginning of the 19th century, together with different opinions and arguments for these. In addition to a trip back in time, the exhibition also shows ways of using historical instruments to teach basic physics to modern schoolchildren.

The symposium programme included visits to nearly all collections of scientific instruments located in Tartu, a tour in South-Estonia, to places related to Struve's Geodetic Arc, and also to Tallinn. A book of abstracts from the conference is available at http://sic.2014.ut.ee/. All presentations were recorded and can be accessed from the Tartu University television at http//www.uttv.ee/naita?id=20215. In the end, it is also worth mentioning that the event won the 2014 Estonian Museums Award in the category of science events held in museums.