Guest editor's note

History of mathematics has a special place among histories of the sciences in that it is usually seen as the least accessible to readers without substantial background in the field. It is even often maintained that it can be practised as well as appreciated only by mathematicians. However, mathematics is also embedded in the society: its practice, research goals, and applications arise and are created in dialogue: between the mathematicians and other scholars and between mathematicians and the society at large.

A series of winter workshops on history of mathematics, organised since 2011, strives to support interdisciplinary debate with regard to the history of mathematics. One of the purposes of the series has been to show mathematics as an indispensable part of our culture, which is reflected also in the themes of the previous workshops: *Mathematics – Language – Society* (2011), *The Phenomenon of Migration in the History of Mathematics in the 20th century* (2012), "*Mathematics for the People!" or History of Mathematics and Popularization with respect to history of the sciences in general* (2013), *Crossroad, melting pot, asylum, or trap? International influences on Prague mathematical culture* (2014), and *Mathematics, mathematicians and war: How does war affect mathematical work and vice versa* (2015).

The theme of the 2016 workshop was *Mathematics and society: How mathematics contributes to the quality of life*. In this particular workshop, rather than simply juxtaposing two contradictory claims, namely that "mathematics is all around us" or that "real mathematics is almost wholly useless" (G. H. Hardy), we tried to explore how mathematics influences people's lives both directly and indirectly. Mathematics is frequently said to have contributed to developments in technology, notably in fields like aerodynamics and computing. On another level, doing well in mathematics was, since the industrial revolution, thought to imply the possibility of getting a better job, earning one's bread in a less mundane way, for example as a civil engineer as opposed to a bricklayer. On yet another level, actuarial mathematics allowed to develop social insurance systems, which provided people with financial security even during times of bad luck. More recently, mathematics and statistics have permeated economics as well as a wide range of scientific fields from biology through medicine to psychology and sociology.

In this special issue, we present a bouquet of different approaches that can be encountered at the Winter Workshops on History of Mathematics. In his paper, Danny Beckers shows how new ways to teach elementary mathematics were pushed through with the idea of making something good for the public. If in the 18th and 19th century Netherlands being good at mathematics meant the possibility of getting a better job, the emerging field of professionals (mathematicians) in turn informed the educators about how to achieve greater results in mathematics. His

story is unthinkable without taking into account various actors: the mathematicians, the teachers, the pupils, and also the schools as public institution. Ladislav Kvasz, on the other hand, looks deeply into the work of mathematicians. Informed by philosophy of mathematics, he compares the mathematical thinking to thinking in other sciences. Finally, Michal Plavec explores the use of measure units and shows how a name for a unit of length could become identical with a name for a unit of area. While this can be puzzling at first, it does make sense when one realises that all the fields they needed to measure had a standard width.

We hope even non-mathematicians will enjoy reading articles in this issue.

Helena Durnová, Jan Kotůlek
Editors

Acknowledgement:

The 2016 winter workshop *Mathematics and society: How mathematics contributes to the quality of life* took place on 21 – 24 January 2016 at Tři Studně, near Nové Město na Moravě. The organization of the event, as well as the publication of this issue, was supported by Norway grants, contract No. NF-CZ07-ICP-3-237-2015 "Interdisciplinary education of junior historians of mathematics".

List of workshops and invited speakers:

2011: Mathematics – Language – Society (Jiří Pernes, Ladislav Kvasz)
2012: The Phenomenon of Migration in the History of Mathematics in the 20th century (Reinhard Siegmund-Schultze)
2013: „Matematics for the People!" or History of Mathematics and Popularization with respect to history of the sciences in general (Luděk Vacín, Raffaelle Pisano)
2014: "Crossroad, melting pot, asylum, or trap?" International influences on Prague mathematical culture (Alena Míšková, Robert Marc Friedmann)
2015: Mathematics, mathematicians and war: How does war affect mathematical work and vice versa (Tinne Hoff Kjeldsen)
2016: Mathematics and society: How mathematics contributes to the quality of life (Danny Beckers, Jakub Rákosník)
2017 (forthcoming): Mathematics and computing: How mathematicians contributed to the developments in computing machinery and in computing in general (Alena Šolcová, Jaroslav Švelch)

More information about the series can be found at http://historiematematiky.webnode.cz/