

O1 History of Mathematics  
Lecture XVI  
Concluding miscellany

Monday 26th November 2018  
(Week 8)

# Summary

- ▶ Questionnaires
- ▶ The exam (briefly)
- ▶ Discussion
- ▶ Hilary Term reading course

# Questionnaires

Please complete a lecture questionnaire

Please complete a class questionnaire

## Typical exam questions

Q. Comment on the context, content and significance of the following extract:

*Something historical and mathematical*

(Choose, for example, any quotation that has appeared in the lectures, or been referenced on the sheets.)

Q. Discuss, with reference to specific examples, how concept X (or terminology Y, or notation Z, ...) has developed between 1600 and 1900.

Q. Discuss with reference to specific examples, how attitudes towards X have changed between 1600 and 1900.

Q. Discuss the significance of text X.

Q. Describe some aspects of the work of major figure X.

# Discussion

What is the history of mathematics?

What does it mean to study the history of mathematics?

How have your views changed (if at all) since the beginning of the course?

### **'Symbolical algebra' in nineteenth-century Britain**

A (small) minority of late-eighteenth- and early-nineteenth-century British mathematicians questioned the validity of the use of negative numbers in mathematics. 'Symbolical algebra', in which the focus is placed on the rules of operations of symbols in algebra, rather than the meaning of the symbols themselves, was devised as a way around the criticism — but it then came under fire itself for being too abstract. In the end, a pragmatic compromise was reached, but symbolical algebra gradually faded away, and has little direct connection to the mathematics we study nowadays. We will study symbolical algebra, and the arguments surrounding it, as an example both of the type of topic that British mathematicians were discussing in the nineteenth century, and of the differences between British and continental mathematics at this time.

# HT reading course: content

## 'Symbolical algebra' in nineteenth-century Britain

Three broad themes will be considered:

- ▶ the arguments against negative numbers that were put forward by **William Frend** and others;
- ▶ the introduction of 'arithmetical algebra' and 'symbolical algebra' by **George Peacock** as a way around the objections;
- ▶ the way in which these ideas were briefly taken up by **Augustus De Morgan** and others, before finally fading away.

As during the lecture course, the emphasis will be on the use of **original sources**. You will therefore read selections from the work of Frend, Peacock, and De Morgan — plus other relevant materials that may arise.

## HT reading course: arrangements

**Seminars:** probably Monday afternoons 3:00–4:30pm, but **tbc**

**Essays:** up to 2000 words to be submitted in advance for discussion in the seminars in weeks 3, 5 and 7

**Assessment:** extended essay (3000 words), details of which will be announced on Monday of week 7. To be submitted by 12 noon on Monday of week 10.



## HT reading course: vacation work

Vacation reading for discussion in first-week seminar in HT is now to be found on the course webpage.

BSHM

The British Society for the History of Mathematics:

[www.bshm.ac.uk](http://www.bshm.ac.uk)

# BSHM undergraduate essay prize

<http://www.bshm.ac.uk/undergraduate-essay-prize>

See you next term...

