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ABOUT THE COVER: ISAAC NEWTON AND ROGER COTES

SUSAN FRIEDLANDER

The cover of this issue of the *Bulletin* reproduces a letter from Roger Cotes to Isaac Newton. The content could be considered as a “universal editor’s lament”, along the lines “I look forward very much to the final copy of your article. You are late, and we need it now.”

The beginning of Cotes’ letter reads: “The earnest desire I have to see a new Edition of yr *Principia* makes me somewhat impatient ’till we receive yr Copy of it which you was pleased to promise me, about the middle of the last Month, you would send down in about a Fournight’s time.”

I have had the privilege of being chief editor of the AMS *Bulletin* for the past year. I am most grateful to the authors of all the excellent articles that have appeared in the journal, and I am most appreciative of the immense amount of work that is required to write a mathematical article that appeals to a wide audience. However, I am constantly aware of the publication schedule and the need to send gentle reminders to our authors to ensure timely delivery of the articles. Clearly some things have not changed in the world of editing!

Roger Cotes was the editor and the author of the preface for the second edition of Newton’s *Principia*. The second edition was published by Richard Bentley, a classical scholar and Master of Trinity College, Cambridge. Bentley and Newton enlisted a young mathematician, Roger Cotes, to do the work of editing. It is amusing to note that the profits of the book went to Bentley, about whom Newton said (perhaps in jest), “he was covetous and loved money and therefore I lett him (publish) that he might get money.” Cotes however was an idealist and a true enthusiast for Newton’s great work, and he dedicated himself to work with Newton for nearly four years on the new edition of the *Principia*. Much of books II and III was completely reworked, and Newton added the famous General Scholium at the end of book III. Cotes, who at 26 was the first Plumian Professor of Astronomy at Cambridge, worked with Newton to deduce the theory of lunar motion and the orbits of comets.

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Newton and Bentley asked Cotes to write the preface. It appears from a letter by Cotes to Bentley that Cotes wished to use the preface to argue Newton's claims over those of Leibnitz: "The *Commercium Epistolicum* . . . gives such indubitable proofs of Mr. Leibnitz's want of candour, that I shall not scruple in the least to speak out the full truth of the matter, if it be thought convenient." However, it appears that Newton tamed the ardour of his young champion, and the preface included no personal references to Leibnitz.

Roger Cotes died in 1716 when he was 34. During his life he published only one paper, "The Logometrica". Most of his work was published posthumously in *Harmonia Mensurarum* in 1722. His name is probably best known for the quadrature formula called the "Newton-Cotes" formula. He was ahead of his time in several mathematical ideas; for example, in notes in 1714 he observed the identity now known as Euler's formula:

$$\ln[\cos(q) + i \sin(q)] = iq.$$

His contemporaries had respect for his brilliance. Newton is reputed to have given him the epitaph "If he had lived, we would have known something."

REFERENCES

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Jr 2 Cambridge August 18th 1709
 The earnest desire I have to see a new Edition of *Y^r Princip.*
 makes me somewhat impatient 'till we receive *Y^r Copy*
 of it which you was pleas'd to promise me, about the
 middle of the last Month, you wou'd send down in about
 a Fournight's time. I hope you will pardon me for this
 unreasonableness from which I cannot free my self & for giving
 you this Trouble to let you know it. I have been so much
 oblig'd to you by *Y^r self* & by *Y^r Book* if I desire you
 to believe me) I think my self bound in gratitude to
 take all the Care I possibly can that it shall be correct.
 Some days ago I was examining the 2^d Cor. of Prop 91 Lib 1
 & found it to be true by *y^e Quadratures* of *y^e 1st & 2^d Surves*
 of *y^e 8th Form* of *y^e Second Table* in *Y^r Treatise De Quadrat.*
 At the same time I went over *y^e whole Seventh & Eighth*
 Forms which agreed with my Computation excepting *y^e*
 First of *y^e Seventh* & Fourth of *y^e Eighth* which were as follows
 Form: 7. I
$$\frac{4de\frac{r^3}{x} - 2df\frac{v^3}{x} - 8deeo + 4dfgs}{4ne\bar{g} - 7ff} = t$$

 Form: 8.4.
$$\frac{+36def\bar{g}S + 8de\bar{g}Sxxv - 28def\bar{g}xv - 16deeo\bar{v} - 15df^3S - 2df\bar{g} + 10df^3xv + 10deff}{24ne\bar{g}^3 - 67ff\bar{g}g} = t$$

 I take this Opportunity to return you my most hearty Thanks
 for *y^r many Favours & Civilities* to me who am
Y^r most Obedient humble Servant
 Roger Cotes

FIGURE 1. We thank the Master and Fellows of Trinity College, Cambridge, for permission to reproduce the image of the letter from Roger Cotes to Isaac Newton.