

*Bibliographies / Archival Inventories*

## THE HON. BERTRAND RUSSELL AND THE EDUCATIONAL TIMES

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For an author as prolific as Russell the start of his publishing career is a question of especial interest; current bibliographical research by K. Blackwell and H. Ruja marks his debut as in *The Cambridge Observer* in 1893. The purpose of this note is to record a predecessor.

## I

The poor state of professionalization of mathematics in Britain gave few opportunities of employment for many of its practitioners; so many of them pursued their interest as a hobby. Consequently, a tradition started in the eighteenth century for the publication in England of journals containing, or even comprising, mathematical questions and solutions.<sup>1</sup> This practice was continued in the nineteenth century in *The Educational Times*, a journal on general educational matters which was started by the College of Preceptors in London in 1847; from Volume 2 (1849) onwards readers posed there mathematical problems for solution by themselves and by other readers. Given the tradition just mentioned, it is not surprising that the activity devel-

<sup>1</sup> See R. C. Archibald, "Notes on Some Minor English Mathematical Serials", *The Mathematical Gazette*, 14 (1929): 379-400 (pp. 396-8 on the two journals).

oped to such an extent that in 1864 a second-order journal was extracted from its parent under the title *Mathematical Questions with Their Solutions. From the "Educational Times"*. Soon it was declaring its independence by adding to its title phrases such as "*with Many Papers and Solutions Not Published in the 'Educational Times'*", although the problems were always stated in the parent journal first.

The publisher of both journals was the London house of Francis Hodgson. The editor was W. J. C. Miller (1832-1903), a largely autodidactic mathematician then teaching at Huddersfield College in Yorkshire;<sup>2</sup> he conducted the questions as a department of the *Educational Times* for some years before launching *Mathematical Questions*.<sup>3</sup> The work was always a hobby; after teaching he changed career in 1876 to become the Registrar of the General Council of Medical Education (later the General Medical Council).

A uniform numbering system of problems had been adopted from early on in the *Educational Times*; by the end the number was approaching 19,000. The majority came from geometry, algebra and number theory, but mechanics, probability theory, and the calculus and mathematical analysis provided proportions. Not all the problems were elementary; several received quite extensive discussion when solutions were presented. Some of the leading British mathematicians contributed, such as M. W. Crofton, A. Cayley, J. J. Sylvester and (posthumously) W. K. Clifford (and later the young G. H. Hardy), as well as figures from the educational community such as W. J. Greenstreet; other regular contributors included C. L. Dodgson (Lewis Carroll) and H. MacColl. Many foreign mathematicians were also fea-

<sup>2</sup> Soon after Miller's time at this remarkable establishment of the nineteenth century, the Principal was Robert Harley (1828-1910), the friend and biographer of Boole. He had earlier lived for many years at Brighouse near Huddersfield, and will have surely known Miller; so it is not surprising that he was also a contributor to the journal. Around the turn of the century chess became such a passion at the school, especially under the Headmaster T. Atkins, that the school magazine was the forerunner of the *British Chess Magazine*. During the time of British decline I. Grattan-Guinness was a pupil there in the 1950s.

<sup>3</sup> See B. F. Finkel (himself an occasional contributor), "Biography. W. J. C. Miller", *American Mathematical Monthly*, 3 (1896): 159-63. Surprisingly, Miller has no entry in the *Dictionary of National Biography (1901-1911)*; but he received brief obituary notices in the *British Medical Journal*, (1903), vol. 1: 525 and *The Lancet*, (1903), vol. 1: 606.

tured, some distinguished. I can assure fellow historians of mathematics that scanning this journal produces many nice surprises.<sup>4</sup>

## II

This paper is concerned with the early 1890s. At that time the *Educational Times* was appearing (nominally) on the first day of each month, in quarto-format issues of between forty and forty-eight pages each. *Mathematical Questions and Solutions from the "Educational Times"* (as it was then called) came out in two volumes a year, each one between 140 and 200 pages in length. A volume was published in "integral" form rather than in numbers, for it began with a detailed contents list of the problems to be solved (having been posed and solved in the *Educational Times*), continued with a restatement (sometimes from earlier volumes) of problems together with their current solutions and related commentary, and finished with a list of unsolved problems. Sometimes short mathematical papers were included (normally only in *Mathematical Questions*), as appendices or even among the solutions.

The *Educational Times* named the proposers and solvers of problems in its volume indexes. *Mathematical Questions* went further, by listing all contributors and their towns of residence in the front matter of each volume. I was very surprised to find recently that "RUSSELL, HON. BERTRAND" was so listed in one of them. Investigation showed that he first appeared in Volume 52 (1890) and ran to Volume 56 (1892); then he resurfaced in Volume 62 (1895) and remained there throughout the editorship of the rest of this series, which was taken over from Miller by the surgeon and statistician (and regular contributor) D. Biddle for Volumes 67–75 (1897–1901).<sup>5</sup> Russell's name was

<sup>4</sup> See my "A Note on the *Educational Times* and *Mathematical Questions*", *Historia Mathematica*, to appear.

<sup>5</sup> Exceptionally for *Mathematical Questions*, Biddle contributed a substantial paper entitled "Ratio Rationis: or That Primary Faculty of Human Nature Which Finds Exercise Alike in Logic, in Induction, and in the Various Processes of Mathematics", 42 (1885): 125–41. I do not know if Russell read this curious muse on an idealist interpretation of logic and axiomatics (especially in Euclid), which incorporated a rehearsal of the valid syllogistic forms, a probability example taken from Boole's *Laws of Thought* (1854), and praise for MacColl's recent work on logic ...

also retained throughout the twenty-nine volumes of the "new series", which ran from 1902 to 1916 (when the *Educational Times* itself ceased to publish the section of mathematical problems, after sixty-eight volumes) and in the final, short series of six volumes (1916–18). These series were published in a larger format, and under the editorship of Miss C. I. Marks.

What did Russell contribute? The question is harder to answer than might be supposed. Although the journal had many contributors and very many contributions, it did not publish indexes of contributors in the first series, so that tracking one down is maximally difficult. But there is one item with Russell's name attached to it. It first appeared in the *Educational Times*, Volume 43 (1890), page 158, in the issue dated 1 March 1890; later it was repeated in *Mathematical Questions*, Volume 53 (1890), page 60:

10429. (A. E. JOLLIFFE.) – A parabola touches the sides of a triangle at  $A'$ ,  $B'$ ,  $C'$ ; prove that  $AA'$ ,  $BB'$ ,  $CC'$  meet on the minimum ellipse circumscribing the triangle.

*Solution by* BERTRAND RUSSELL; Prof. ANDERSON, M.A.; *and others.*  
If the parabola be

$$(lx)^{\frac{1}{2}} + (my)^{\frac{1}{2}} + (nz)^{\frac{1}{2}} = 0,$$

the intersection of  $AA'$ ,  $BB'$ ,  $CC'$  is  $(l^{-1}, m^{-1}, n^{-1})$ . But  $l + m + n = 0$ ; hence the intersection lies on the conic  $x^{-1} + y^{-1} + z^{-1} = 0$ , whose centre is  $x = y = z$ , *i.e.*, the centroid of the triangle. Hence the intersection lies on the minimum circumscribing ellipse.

The second version carried additional remarks in square brackets, presumably composed by Miller or by the proposer. This latter was the mathematician A. E. Jolliffe, then a Fellow of Corpus Christi College, Oxford; his problem was posed on page 39 of the volume of the *Educational Times*, in the issue of January 1890. The elegant solution given above uses homogeneous coordinates. The item does not state that Russell himself had given this form of solution; but it is to his credit that a seventeen-year-old solved the problem at all.

Since the solution appeared in the March issue of the *Educational Times*, it must have come in during the time of Volume 52 of *Mathematical Questions*, which would be why Russell was listed as a contributor there although his solution was not published until the second

volume of the year. However, it is possible that he had submitted solutions to other problems at that time, but the editor classified them as only of "and others" status (see the problem above for an example of this rubric).

## III

Russell is not named for any solution in later volumes of the journal, which is *not* surprising. Up to 1892 he might have sent in some further solutions which (also) gained only the "and others" treatment, but it seems most unlikely that after taking his degree he was interested in these journals; "local" problem-solving was decidedly not his kind of mature concern in mathematics.

Further, it seems unlikely that he contributed to later volumes by proposing problems, for proposers' names were always given. Some names were pseudonyms (such as "N'importe"), but there seems no reason to think that he needed to hide his identity. He might have proposed a problem which was malformed in some way, or had been treated already, but then he would not then have been given contributor status at all. Presumably he did not propose his paradox around 1901 as a problem; the reaction could have been interesting.

Yet Russell's name continued to appear among the contributors of (only) *Mathematical Questions* from 1895. Moreover, the same address was always used: that of his grandparents, Pembroke Lodge, Richmond (the town in which Miller was then a prominent citizen, incidentally). This was quite appropriate for the young man about to go up to Cambridge, and for any later solutions sent in until 1892. But by 1895 he had graduated and was about to live near his first wife's family in the village of Fernhurst, Sussex.

By the 1910s the entry had decreased to "RUSSELL, B.: Richmond", although of course he was living elsewhere. Maybe the editor forgot who this person was. (Presumably no other Richmond resident of that name was contributing.) The situation is strange; a spot check on several other contributors showed greater care in their registration, although of course many were more active than Russell.

## IV

Russell seems to have forgotten completely about this publication,<sup>6</sup> and no documents in the Russell Archives shed light on this matter; further, I have not found any documentary sources for Miller or for Hodgson's.<sup>7</sup> There is also no point in trying to identify internally further problems which might have attracted his attention, although a proportion would have been too difficult for him, at least in the first years of his contact. But it is intriguing to discover a previously unknown detail of the mathematical interests of the young Hon. Bertrand Russell.

<sup>6</sup> In later years he recalled as his first publication a review of 1895 in *Mind*, thus passing over also his 1893 pieces mentioned at the head of this paper. See the discussion of this point in *Russell*, n.s. 1 (1981): 174-92.

<sup>7</sup> I have not found any *Nachlass* for Miller. Soon after retiring from the journal (and also the General Medical Council) in 1897 he retired to Bournemouth, and is most unlikely to have kept his journal manuscripts.

Hodgson's has recently ceased trading. Their papers are not listed in A. Weedon, "Publishers' and Printers' Financial Archives 1830-1919: a Preliminary Listing", *Book Trade History Group Newsletter*, no. 12 (Jan. 1991): 21-56. The editor of this excellent but little-known new publication is L. Hunter, Institute of Bibliography and Textual Criticism, University of Leeds.