Correspondence

DEAR EDITOR,

Two quite critical errors were introduced at the typesetting stage into our article 'Improving the efficiency of racing shell oars' *Math. Gaz.* **84** (November 2000) pp. 405-414.

In Figure 2 on page 409 the force R_α on the blade should be perpendicular to the blade, but it was drawn in the same straight line as the normal to the end of the deflected shaft. This point is fundamental, being the whole basis of the argument on which the paper is based. The correct diagram is shown below.

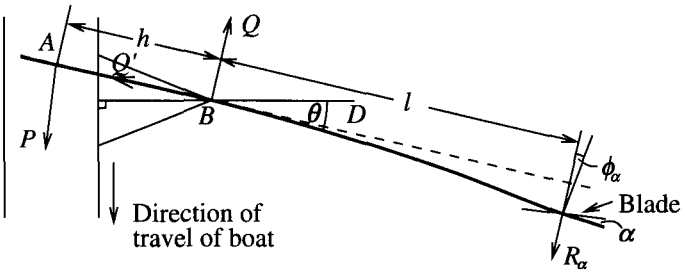

FIGURE 2 *Mathematical Gazette* **84** (November 2000) p. 409 (corrected)
Plan view of an oar with blade lead angle α during the power stroke

Also, equation 17 on page 410 should read

$$2\bar{F}_\alpha = k\bar{v}_\alpha^{\,2}. \qquad (17)$$

Yours sincerely,

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Editor's Note: We apologise most sincerely to the authors and our readers for these errors.

DEAR EDITOR,

E. Bussmann has uncovered a shocking omission in my note 82.1 (IV). I stated that I had found only one 4-digit S·P number (and that should have been 14, 10, 17, 1 to base 19, and not as printed) and no 5-digit S·P numbers. The program that I used has been deleted and I can only surmise that an incorrect jump led to my finding only numbers where the least significant digit is 1. A new program, that checks with Bussmann's work, shows that there are 4-digit S·P numbers for 62 values of b ($13 \leqslant b \leqslant 99$),

$b = 56$ giving 5 examples. There are 5-digit S·P numbers for 21 values of b ($13 \leqslant b \leqslant 49$), $b = 46$ and $b = 49$ each giving 3 examples, and 6-digit S·P numbers for 8 values of b ($13 \leqslant b \leqslant 29$), $b = 29$ giving 3 examples. It seems likely now that the number of examples in fact increases with b.

H. J. GODWIN

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DEAR EDITOR,

I have a puzzle in the theory of numbers which I cannot prove but perhaps your readers can!

Consider the function $2n^2 + 1$.

Let n take on values of all the integers 1, 2, 3, 4, ...

We can make of a table as follows:

n	$2n^2 + 1$	Prime factors of $2n^2 + 1$	Prime number list
1	3	3	3
2	9	3^2	
3	19	19	19
4	33	11 & 3	11
5	51	17 & 3	17
6	73	73	73

In the table above, the prime numbers which occur as factors of $2n^2 + 1$ and which haven't previously occurred as a factor of a smaller number of the form $2n^2 + 1$ are placed in the final column.

The puzzle is that for this function $(2n^2 + 1)$ no matter how big n is, no more than one new prime ever occurs in the final column for any value of n.

Yours sincerely,

JOHN E. PARKES

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DEAR EDITOR,

'Currency Corner: Gauss and the curve of errors' by Chris Pritchard in the July issue of the *Gazette* caught my attention. The following tale may be of interest.

Two years ago, I was taking a class in Projective Geometry at The Rudolf Steiner School of Edinburgh. Having introduced the class to Pascal's theorem concerning a hexagon inscribed in a conic, I told them that Blaise Pascal had discovered his result when only sixteen years old, the same age as most of them. I then reminded the class that, a year before, they had heard about Carl Friedrich Gauss and how he had worked out how to sum an arithmetic series when he was ten. (Some may not know the story of how the master in charge of Gauss's class had set his pupils the task of summing such a series in the hope that they would be occupied for an hour or more.

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Young Gauss spotted how to do it and came up with the answer in a few minutes.)*

In my class there were three German pupils who were visiting the school for the term. With great excitement they produced a 10D-mark note and allowed me to take it round the class. Sitting at the back of the room was one of Her Majesty's Inspectors of Schools. I showed him the banknote. I do not know what he thought as he simply smiled but carried on writing furiously.

[I than asked the class if they knew which well-known composer wrote an opera at the age of twelve! 'Mozart', they chorused. Well done the music staff, I thought.]

The visiting Germans were first class and worked very well. I wrote to Professor Tietmeyer, the President of the Deutsche Bundesbank and told him the tale and congratulated the Bank on their 10D-mark note. I also said I was sorry they were about to lose their hard currency. I had a splendid reply to my letter. They pointed out out that they would have D-mark notes that 'will be hard currency for years to come, if only because they have been cast in acrylic glass'. They sent me a specimen. It was a 20D-mark note in acrylic glass. This note showed one of Germany's greatest poetesses, Annette von Droste-Hülshoff.

Yours sincerely,

LESLIE BARR

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DEAR EDITOR,

I first met Mary Bradburn in the winter of 1965 when she was conducting interviews for aspiring mathematics undergraduates with Barbara Yates. This was to be the first year in which the women's college was to accept male undergraduates. It was a glorious day and the college was covered in snow; I fell instantly in love with the place. There was therefore the small matter of convincing the college to accept me. Both Mary and Barbara were senior teachers of the University who had taken the decision to put teaching undergraduates before their own research interests. Their interviewing was friendly but purposeful; they led me very gently through my hopelessly nervous attempts to differentiate $y = x^2$ from first principles. I remember well that I was determined to attempt to go to the limit as soon as possible and that I reached the point of asking after every algebraic simplification 'Now?' at which Mary would shake her head .... I'm not sure who felt the most relieved when finally the deed was done.

Her first lectures to us were in analysis, they were our first introduction to the formality and precision of mathematical discourse. Used to the informality of the small sixth form classroom, and finding myself in a lecture hall of 200 students I felt somewhat lost as Mary delivered her lectures apparently into the cavernous space of the Victorian Lecture Theatre rather than to us as individual students. Perhaps this was her way of

* Editor's Note: I am told that this story is now considered apocryphal.

demonstrating the transfer of responsibility for learning from the teacher to the autonomous student. Nevertheless her lectures were clear and succinct. In revision session she would often say 'good students will note that.' Those who recognised her wisdom took such comments literally, others of us found ourselves floundering in the analysis papers!

The formality of the lecture room evaporated when Mary was working to help students on a personal basis. She kept an eye on her students and gave them advice whether in the academic or personal field which was always sound clear and forthright. She wrote a personal note to congratulate me when she heard that I was entering the teaching profession but later, hearing me extol the virtues of 'modern mathematics', quietly observed that the children would be better off learning how to work out how much wall-paper was needed to decorate a room than being initiated into the mysteries of group theory. Yet more words of wisdom that all too slowly worked their way past my youthful arrogance and certainty!

Only when I met Mary again through the Mathematical Association did I begin to realise that she was very far from the establishment figure that I had first observed. Perhaps the young always confuse clear strong authoritative pronouncements with authority. She fought for the best interests of the Association and for Royal Holloway College without fear or favour. All were free to disagree with her but the wise recognised that they would face a formidable opponent unless their case was well argued and sound. When the College proposed to sell its most valuable possession, an original Turner, in order to fund an expansion scheme she opposed the scheme on principle, warning that the sale of other paintings in the college's superb collection of Victorian masterpieces would inevitably follow. This has sadly proved true.

Mary will be much missed but her legacy will live on not least, I hope, in some small measure, through her students, who have absorbed just a little of her wisdom.

Yours sincerely,

ROY ASHLEY

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DEAR EDITOR,

I first met Mary Bradburn in the 1970s when Clive Kilmister invited me to help her with the moderation of the London Teaching Certificate by Continuous Assessment. As a raw recruit, I had to be shown the ropes, and I duly sat in on some of her oral examinations for final year students. We asked one young lady, about to be a Primary Teacher, what she thought about getting young children to learn their tables. 'Oh,' she said, 'I'm not going to teach any tables to my pupils until they fully understand the concept of number.' Mary twinkled mischievously. 'I'd be glad if you'd explain it to me,' she said, 'because I don't understand it. And,' she added, 'I've got a PhD in Mathematics!'

Later, when I was declared suitably trained, we had to decide who would be responsible for which college. Mary immediately wrote out a list, with the colleges ranked in order of the quality of the lunch they provided for visiting examiners, and on this basis we achieved a fair division of labour and reward.

Yours sincerely,

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Notices

Readers of the *Gazette* who do not already know will be saddened to learn of the deaths of three contributors.

John Fauvel died on Saturday, 12 May, of a disfunctional liver and kidney, arising from a condition he had had for some years. He was only 54. His work on the history of mathematics was widely respected and messages from his many friends across the world are being collected via email. John was a lecturer at the Open University and was prominent in the British Society for the History of Mathematics.

Canon Donald B. Eperson died on Sunday, 13 May, aged 96 years, following a short illness. He had recently completed his autobiography and a book *Music and mathematics*, to be published next year. He was a teacher, mathematician, musician, writer and cleric. He taught Alan Turing at Sherbourne School and was Canon Emeritus of Salisbury. His work in the Church schools movement led to the establishment of Voluntary Aided schools in the 1944 Education act. His *Gazette* contributions span 67 years, beginning and ending with articles about Lewis Carroll. He was also a stalwart supporter of *Mathematics in School*, where his Puzzles, Pastimes, and Problems column ran for many years.

Frank Gerrish died on Friday, May 18th, aged 75 years, following several months of ill health. A former lecturer at Kingston Polytechnic, Frank was noted for wide mathematical knowledge and his precision in all things. He had a passion for music, playing the piano, organ and harpsichord, and knew eight languages. He never owned a car, preferring his trusty bicycle, which he used to explore the countryside of Southern England. As a *Gazette* referee, Frank was extraordinarily generous, sometimes taking the trouble to rewrite a inexperienced author's contribution, and always giving careful and extensive advice.