To the Editor, *The Mathematical Gazette*

DEAR SIR,

May I draw attention to a trend in Mathematical Examinations at A and S Levels? Over the years there has been a steady increase in Calculus and Applied Mathematics, with a corresponding decrease in Pure Mathematics.

This may well be sound practice for the majority of boys, but it brings severe drawbacks for the ablest mathematicians. There is now little space for testing Algebra, and sometimes none for testing pure geometry. Yet these two subjects are the best training ground for real scholars.

Would it not be possible to cater for both schools of thought? For instance, at A level, papers 1, 2, 3 on Calculus, Pure, Applied could be compulsory: whilst paper 4 gave a choice 4a Calculus and Applied, or 4b Pure Maths.

The most promising boys are I believe suffering under the present arrangement. They are few in numbers, but important in the future of the country.

Yours faithfully, R. M. CAREY

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To the Editor of *The Mathematical Gazette*

DEAR SIR,

For the benefit of readers of the Association's "Second report on the teaching of arithmetic in schools" I append comments on three of its historical statements. Others also, particularly page 28, require qualifying but too much space would be required.

Page 20, second paragraph, states "Decimal fractions may be said to have been invented in the sixteenth century A.D. by Christoff Rudolff but his work does not appear to have been appreciated. Fifty-five years later, in 1585, Stevin published an account ..." This is grossly misleading. It is well known that Smith's contention that Rudolff invented decimals [**1**] arises from his misconception as to the meaning of the word "inventor" [**2**]. Most historians [**3**] regard Stevin as the inventor of decimals.

Page 27, third paragraph, states "In 1585 the Dutchman Simon Stevin published a book to popularise decimals and he used two notations. The number 123.456 he wrote as

(i) $123'4''5'''6''''$

or

(ii) $123(0)4(1)5(2)6(3)$."

Notation (ii) is substantially correct, except that Stevin enclosed his exponents in complete circles instead of parentheses, but notation (i), although similar to that used transitionally by a few subsequent writers, was never used by Stevin in any of his published works [**4**]. It is true that Stevin used the words "primes", "seconds", "thirds" etc., in respect of the tenths, hundredths, thousandths etc. digits, as in "Thus

3①7②5③9④

is 3 primes, 7 seconds, 5 thirds, 9 fourths and we might continue this indefinitely. It is evident ... that this number is 3759/10,000." [**5**], but this is a long way from actually using notation (i). Yeldham is incorrect on this point [**6**] (and other points also).

Page 64, end of last paragraph, states "... Henry Briggs calculated the first set of logarithm tables in England by truly heroic feats of the square root process." This is obscure. The facts are as follows. The earliest logarithm tables published in London, apart from Wright's translation of Napier's tables in 1616 and 1618, were those of Speidell, 1619 [**7**], Gunter, 1620 [**8**], and Briggs, 1624 [**9**], those of Briggs being the first to explain the square root technique for calculating logarithms. However, there is a small set of tables [**10**], undated but probably published in 1617, in the British Museum with Briggs' name on them, but the way in which they were calculated is not stated.

Yours faithfully, B. J. Phillips

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REFERENCES

1. Smith, D. E. *History of Mathematics*, 1925, Vol. II p. 240.

2. For a discussion of this word in the present context see, for example, Rob. Depau, *Simon Stevin*, Brusselles 1942, p. 62. B.M. Ac988eb/5.

3. e.g. Sarton, G. *Isis* 23, p. 173, "I cannot agree (with Smith)".
Cajori, F. *A History of Mathematical Notations*, 1928, Vol. I, p. 314 "The invention of decimal fractions is usually ascribed to the Belgian Simon Stevin, in his 'La Disme'".

4. The British Museum collection is very good and includes, in particular, *L'Arithmetic*, 1585 (which includes *La Disme*), C74a2, *De Thiende*, 1585, C54e11 and Albert Girard's *Les Oeuvres de Simon Stevin*, 1634, 530m12.

5. *La Disme* "Comme 3①7②5③9④, c'est à dire, 3 Primes 7 Secondes 5 Tierces 9 Quartes; & ainsi se pourroit proceder en infini." etc. For a complete translation of La Disme see Smith, D. E. *A source book in Mathematics*, 1929 (Dover reprint 1959).

6. Yeldham, F. A. *The teaching of arithmetic through* 400 *years*, 1936, p. 86. It is interesting to note that W. W. Rouse Ball made a similar error in his *Short account of the history of mathematics*, 4th Ed. 1908 (Dover reprint 1960), p. 197.

7. *New Logarithms*, London 1619. B.M. C95c17.

8. *Canon Triangulorum*, London 1620. B.M. C54e10(2).

9. *Arithmetica Logarithmica*, London 1624. B.M. C82f8.

10. *Chilias Prima*. B.M. C54e10(1).

To the Editor of *The Mathematical Gazette*

DEAR SIR,

May I be allowed to comment on a paragraph in the review in the May issue of *School Mathematics Project: Book T?*

In referring to the appendix on constructions, your reviewer says that it allows a wide variety of instruments, and suggests that the authors do not realize that satisfaction may be derived from doing as much as possible with as little as possible. But most of this appendix is devoted to deriving just this satisfaction from the use of *one* instrument only, the parallel-sided ruler. Robinson Crusoe might, in fact, have performed all possible Euclidean constructions with a single piece of driftwood.

I was in no way responsible for this appendix, but I feel those who were should be acquitted of a view which is the exact opposite of the one which actuated it.

Yours, etc., H. MARTYN CUNDY

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To the Editor of *The Mathematical Gazette*

DEAR SIR,

As more teachers become interested in "Modern Mathematics" the danger of "dabbling" becomes more apparent: a few lessons on binary numbers with no follow-up of computer mathematics or a few lessons on Venn diagrams with no indication of the general subject of Boolean algebra and its applications to logic and circuit theory. I have been teaching one of the new syllabuses for several years and am convinced of the interest and importance of such new topics but this importance only becomes apparent when isolated topics are related to the whole subject.

The cause and the cure lie in the sort of in-service courses provided for teachers. Too many courses, though not all, provide a few "catch phrases" which teachers pass on, rather like a language teacher whose knowledge of the foreign language is confined to a few pages of a phrase book. Courses should cover few, perhaps only one, new topic but should, combined with extra reading, study the subject deeply so that it can be taught with a real understanding of the significance in mathematics as a whole.

Yours, etc., MARGARET HAYMAN

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A COINCIDENCE

The Class Room Note 116, *The Cosine Rule and the Addition Formula,* by M. W. Green (*XLVIII*, 366, December 1964), is identical in substance with a page or two of Budden and Wormell's "Mathematics through geometry" (1964), and vice-versa.

E. A. M.