Can stupidity go further? But was it really stupidity, or just corruption of the mind by vicious teaching? Is this perhaps the natural way for a boy who has never heard of a right angle except by the name of "90°", or worse still just "90"?

Writing last March in one of our most respectable papers, a celebrated sportsman attributed the excellence of the Oxford crew, then hot favourites, to their application of the maximum effort when the oars were at ninety degrees to the boat. After that Cambridge won.

Nobody wants to abolish degrees: in their right place they are harmless enough, though 60ths of a right angle would have been a better unit to choose but for astronomical and theological complications in ancient Babylon. But this monstrous supremacy of the degree over Nature's right angles and radians must be broken if sanity is to survive. It begins with the masters, who are more to blame that the boys, sloppily calling a right angle "90"; and it reaches its climax in "$(\pi/2)^2 = (90°)^2 = 8100$". Who will join in a firm stand against the usurper?

Yours etc., W. Hope-Jones

To the Editor of the *Mathematical Gazette*

Dear Sir,—Prof. Watson has very kindly drawn my attention to a geometrical proof by J. W. L. Glaisher of the identity

$$\sum_1^N n^3 = \left(\sum_1^N n\right)^2,$$

which is the subject of the first part of my note on sums of powers of the natural numbers ("Mathematical Gazette", October 1957, p. 187). Glaisher's proof may be familiar to many readers of the "Gazette", but was new to me; it is given in "Messenger of Mathematics", III (1874), p. 5. It is equivalent to mine, though it looks different because it is expressed in geometrical language.

Suppose we take two axes at right angles, intresecting at O. Given the sequences $a_n$, $b_n$, we mark off in succession lengths $\mathrm{OX}_1 = a_1$, $\mathrm{X}_1\mathrm{X}_2 = a_2, \ldots$, $\mathrm{X}_{n-1}\mathrm{X}_n = a_n$, .. on the first axis, and $\mathrm{OY}_1 = b_1, \ldots$, $\mathrm{Y}_{n-1}\mathrm{Y}_n = b_n$, .. on the second. We then complete the rectangle $R_n$ with $\mathrm{OX}_n$, $\mathrm{OY}_n$ as sides; the lengths of these are $A_n$, $B_n$, where $A_n = a_1 + a_2 + \ldots + a_n$, $B_n = b_1 + b_2 + \ldots + b_n$, and so the area of the L-shaped region between $R_n$ and $R_{n-1}$ is $a_nB_n + b_nA_{n-1}$. From this point of view, the process of partial summation used in my note simply expresses the fact that the area of $R_N$ is the sum of the areas of such regions for $n \leqslant N$ (taking $R_0$ as having zero area). Glaisher's proof consists in applying this geometrical idea to the special case $a_n = b_n = n$ (the areas being evaluated geometrically by induction). He also points out that the same idea can be used to demonstrate the formula for $\sum_1^N n$, and his version of this, using rectangles of sides $n$, $n+1$, is a little neater than mine. Thus, apart from certain differences of detail, my proof may be regarded as a translation of Glaisher's into the language of analysis.

Yours, etc., S. M. Edmonds

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