the first volume of Horsley's edition, 1779.   That is to say, in 1744 this work also " demanded translation into the universal language "

Yours sincerely,

E. H. NEVILLE.

Reading, 14th February, 1935.

The Editor, *The Mathematical Gazette.*

LAGRANGE'S EQUATION.

To the Editor of the *Mathematical Gazette.*

DEAR SIR,—In the *Gazette* for February, 1935, Mr. R. J. A. Barnard, in an article entitled "Lagrange's Equation", criticizes certain statements which are alleged to appear in my textbook on Differential Equations.   May I point out that there is a wide discrepancy between what Mr. Barnard imagined I said and what I really said ? I give two examples in parallel columns :

BARNARD.	PIAGGIO.
P. 31. "Piaggio (p. 147, new edition), begins with the statement that the equations $$\frac{dx}{P}=\frac{dy}{Q}=\frac{dz}{R}, \quad \ldots\ldots\ldots\ldots(1)$$ and $\quad Pp+Qq=R, \quad \ldots\ldots\ldots\ldots(2)$ *are equivalent because they represent the same surfaces.*"	**P. 147.** "We saw that the simultaneous equations $$\frac{dx}{P}=\frac{dy}{Q}=\frac{dz}{R}, \quad \ldots\ldots\ldots\ldots(2)$$ represented a family of curves . and that $\phi(u, v)=0 \ldots$ represented a surface through such curves. Through every point of such a surface passes a curve of the family, lying wholly on the surface. Thus equations (1) and (2) are equivalent, for they define the same set of surfaces."
P. 32. "Yet Piaggio calls it a 'Special Integral', and says that it cannot be deduced from the differential equation or from the given complete integral in the usual way."	**P. 150.** "It is sometimes stated that all integrals of Lagrange's linear equation are included in the general integral $\phi(u, v)=0$. But this is not so. But $z=0$ satisfies the partial differential equation, though it is obviously impossible to express it as a function of u and v. Such an integral is called special . they can be obtained by applying a suitable method of integration to the Lagrangian system of subsidiary equations. "

It may be conjectured that the first of these misquotations arose from Mr. Barnard picking out one sentence near the end of my page 147 and ignoring the two paragraphs preceding it.   No such

simple explanation can be found in the second case, where the essential word *general* has been altered to *complete*, and a clause has been added which is almost the direct negative of the original. I am sure that Mr. Barnard did not wish to misrepresent me, but it does seem that he must have been a trifle careless in verifying his references. Of course I recognize that the main object of his paper was to plead for a reconsideration of the treatment of special integrals. This is an interesting point which I hope to discuss in a future article.

Yours faithfully,

H. T. H. PIAGGIO.

University College, Nottingham,
    11th February, 1935.

1008. Solution of cross-word, Gleaning 994 (XVIII, p. 344 ; December, 1934).

¹2	²2	³0	⁴4	⁵·	⁶6	2	▓ ⁷2	⁸2
⁹3	·	1	4	1	6	▓¹⁰ 1	5	3
¹¹4	7	·	9	6	▓ ¹²8	4	6	0
¹³0	1	4	1	▓ ¹⁴7	0	6	▓	4
¹⁵9	8	▓ ¹⁶5	¹⁷3	1	4	4	¹⁸1	▓
▓ ¹⁹2	²⁰2	6	9	8	1	▓	²¹3	²²6
²³1	8	1	▓ ²⁴3	9	3	²⁵7	0	1
²⁶2	1	7	²⁷1	7	▓ ²⁸4	1	·	0
²⁹1	8	5	5	0	³⁰8	▓ ³¹6	0	2
5	▓ ³²6	7	1	0	8	8	6	4

Across.

7. Methuselah's last birthday-cake had 969 candles (Gen. v, 27).

10. Fishes (John xxi, 11, and heading of chapter).

Down.

10.   " Sing a song of sixpence,
                                A pocket full of rye,
                            Four-and-twenty blackbirds
                                Baked in a pie."

If in 1π you bake 24, then in 61π you bake 1464.

20. No. 222 in *Hymns Ancient and Modern* begins " Ten thousand times ten thousand ".

27. Acts xxvii, 37 ; Ps. cxix.