

LETTERS TO THE EDITOR

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A NEW METHOD OF OBTAINING
SQUARES OF NUMBERS

MANY types of mathematical investigations often require squares of numbers of multiple digits. Barlow's tables and calculating machines not only have their limitations but are not always available to workers. A simple and ready method for obtaining squares of numbers containing any number of digits is illustrated here with typical examples.

(i) Square of a figure of two digits—95.

$$\begin{array}{r} 21 \\ 95 \\ \hline 9025 \end{array}$$

Square of the first digit—25. Put 5 of 25 in the units place of the result and carry over 2; next multiply the first and second digits of the number, double the product and add 2, —92. Put 2 of 92 as the next digit of the result and carry over 9. Next square the second digit and add 9 of 92; that will give the last digits of the required square—9025.

(ii) Square of a figure of three digits—647.

$$\begin{array}{r} 321 \\ 647 \\ \hline 418609 \end{array}$$

Square of the first digit—49. Put 9 of 49 in the first place of the result and carry over 4.

Next multiply the first and second digits, double the product and add 4—60. Put 0 as the next digit in the result and carry over 6. Next multiply the first and third digits, double the product and add to it the square of the second digit, and then add 6—106. Put 6 as the next digit in the result and carry over 10. Next multiply the second and third digits, double the product and add 10—58. Put 8 as the next digit and carry over 5. Next square the third digit and add 5, we get 41 as the last two digits of the result—418609.

(iii) Square of a figure of five digits—64537.

$$\begin{array}{r} 54321 \\ 64537 \\ \hline 4165024369 \end{array}$$

Square the first digit—49. Put 9 as the first digit in the result and carry over 4. Multiply the first and second digits, double the product and add 4—46. Put 6 as the next digit in the result and carry over 4. Next, multiply the first and third digits, double the product, add the square of the second digit and then add 4—83. Put 3 as the next digit in the result and carry over 8. Next multiply the first and fourth digits, double the product and add to it the doubled product of the second and third digits, and then add 8—94. Put 4 in the result, and carry over 9. Next multiply the first and fifth digits and double the product, multiply the second and fourth digits and double the pro-