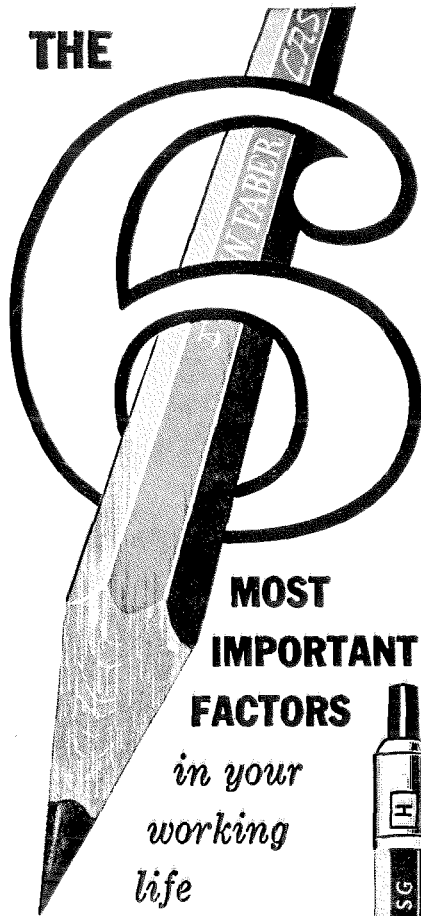


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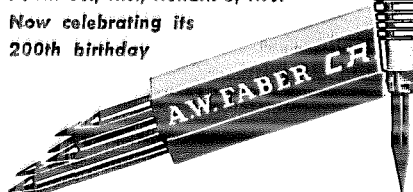
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# Letters

New York, N.Y.

EDITOR:

We were very interested to read about "The World's Smallest Motor" in your December issue . . . but what can you do with the thing?

MRS. R. L. W. MERTON

University of Alaska

EDITOR:

Fritz Zwicky pondering smog (E&S, November 1960) appalls me with the narrowness of his view. The solution is quite simple. Abandon Southern California!

As I sit in my office I look south through a hundred miles of crystal clear air to the mighty peaks of the Alaska range. The snow reflects the pink hues of sunrise. And it is at a decent hour to be enjoyed—10 a.m. We spent an hour or so yesterday tracking a moose in the birch forest in back of the campus. A bad traffic jam resulted Saturday when two dog teams decided to exchange sniffs in the middle of College Road. Perhaps you see my point. Abandon Southern California!

E. J. GAUSS '54

Assistant professor of mathematics

The micromotor developed by William McLellan (Caltech '59) has no immediate practical purpose. As Richard Feynman explained in the article that inspired the micromotor ("There's Plenty of Room at the Bottom"—E&S, February 1960), it is just an incentive to more advanced research in the field of miniaturization.

At Electro-Optical Systems in Pasadena, however, some of Bill McLellan's co-workers have made a list of impractical uses to which the motor can be put—such as:

- Merry-go-round for flea circus.
- Micro-centrifuge.
- Motorized needle-threader.
- Spiderweb saw (classified).
- Personal phonograph—wear in ear.
- World's smallest revolving stage.

# Books

*The Arithmetic of Computers*

by Norman A. Crowder

*Adventures in Algebra*

by Norman A. Crowder and Grace C. Martin

Doubleday ..... each \$3.95

Reviewed by John Todoroff '61

Reading one of the new TutorTexts approximates hiring your own private instructor—and an exacting, but delightful and often humorous one indeed. He is happy to answer questions when the reader cannot follow the instruction, patient to explain just why you misunderstood a question, and ready with new material at a pace suited to each individual.

All this is accomplished with a format of a half-page of instruction followed by a multiple-choice question. A correct answer sends one on to another page for a pat on the back and an advanced lesson; an incorrect answer directs the reader to still a different page where he will be surprised to find that the book knows just why he made the error. These

questions emphasize basic principles rather than rote memorization. All who follow instructions through to the last page will have learned the fundamentals of the subject treated.

*Adventures in Algebra* presents elementary algebra in a way well-suited for either a high school student's introduction or an adult's review of the concepts with which mathematicians deal. Symbols and equations are presented hopefully as things quite useful rather than mystical. With the basic assumptions clear one moves step by step to appreciate the rigors of proving a theorem, establishing the sum of a series, and discovering irrational numbers. This is far more basic mathematics than manipulating equations to "solve for x."

*The Arithmetic of Computers* opens with a review of the principles of the decimal system. Then it introduces other counting systems. Much space is devoted to adding, subtracting, multiplying, and dividing with octal and binary numbers, attempting to show why these systems are more than clever mathematical games, but of essential use for electronic computers.

As the author says in his opening sentence, a TutorText "is not an ordinary book."

*Engineering and Science*