

Foreword to: The Education of T.C. MITS

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To enter the world of this book is to discover a hopeful land where ideas—pure ideas—are being washed sparkling by a rain, and they all, like sunflowers, will soon be wanting to show themselves to you, newly petalled, radiant with possibility and delight and usefulness. The authors had the genius to be able to write a math book truly for *everyone*; to have chosen just the right ideas to explain so that their book contains the essence of what makes mathematics truly *mathematics*; to have written it in so compelling a way that it can be read in a trolley car or in a foxhole; and to have written it so economically that the entire booklet, in its early soft cover GI version, could be slipped into an opened pack of K-rations.

Written in 1942, this book reflects the grimness and dangerousness of the time, brightened by the fervent belief that ideas will make for a glorious future. The GI edition bore the label *The Overseas edition for the Armed Forces*, and measured just 3 3/4" by 5 3/8". What luck the Council for Books in Wartime had, to be able to offer the troops this educationally uplifting book, speckled with its bright cartoon drawings of T. C. MITS (**The Celebrated Man In The Street**) who—in defiance of (or perhaps oblivious to) the ravaging forces of destruction of the age—is often shown sporting a hyperboloid cap and contemplating, cheerily, his place in some vast setting of the mathematical sublime.

As you will see, the book you hold in your hands is deliciously funny. Also, at times a bit exasperating. The first thing that reading it does to me, is to return me to the state of a twelve year old, the authors coming at me like a loving, elderly uncle and aunt. They plunk me onto a chair which is a bit too high for my legs to reach the ground, and

slide a large glass of chocolate milk and a home-baked cookie in my direction, all in preparation for showering me with exuberant lessons (of life, of math, of the world . . . stuff like that), each with its concomitant ulterior moral.

With or without the chocolate milk and cookies, the encounter with the Liebers is thrilling because the math they do is utterly wonderful. Their eye-opening simple questions (section 3) about tying belts around the equator, and loosening those belts ever so slightly, have the uncanny effect of getting you, me, and Mr. MITS to think (and think deeply) in a quantitative way, before we realize what's happening to us. The Liebers invite us to the *wedding* of algebra and geometry (section 7). They tell, pokerfaced, an enticing, but false proof, in Euclidean geometry, the persuasiveness of which **requires** relying on a subtly incorrect hypothesis in one of their own diagrams (section 13). Once they assist in exposing their misleading illustration, a moral (as you can imagine) follows. They offer their readers a tincture of calculus (section 10), which—to my mind—is all that you need have in order to feel the genius of that subject. They give us a taste of finite geometries (section 15, entitled *Pride and Prejudice*) from which the concept of *models for axioms of geometry* so effortlessly flows that they need spend hardly a phrase on these more abstract concepts: you just *see* them. They do their similar magic with finite arithmetics (section 16). They explain—really explain—the fourth dimension (section 18). They explain relativity. All of these explanations are laced with morals, comments about Hitler, and a cornucopia of avuncularity.

The current trend in education of a broad public follows the trend in more specialized education, the *mega biblion* approach, hitting the poor person who is to be uplifted with thicker and thicker tomes. So much so that, given the heft of contemporary Calculus texts, one wonders why the students don't get Physical Ed. credit for

weightlifting, along with credit for their math course. Whether out of laziness or general insurrectional spirit, when I was a teenager I had a fondness for the somewhat confrontational slim books that aim to give the *essence* of the subject written about, with none of the claptrap surrounding it. In this, I was very much of the camp of the legendary doubter who went to Rabbi Hillel asking that the famous sage teach him all of the Torah while he, the student, stood on one leg (to which the obliging rabbi responded by offering what is in effect the categorical imperative. It was natural, then, for me to have fallen in love with the Liebers' books. For presented here—so deftly, so lightly—is the very essence of a mathematical sensibility. All you really need to know.