Review of

Lion Hunting & Other Mathematical Pursuits: A Collection of Mathematics, Verse, and Stories by Ralph P. Boas, Jr., edited by Gerald L. Alexanderson and Dale H. Mugler, The Mathematical Association of America, Washington, D. C., 1995. 320 pp., $35.00(paper). ISBN 0-88385-323-X.

As a collection of diverse persons, mathematicians suffer from more negative stereotypes than almost any other group. This is unfortunate, discouraging and most often wrong. Widely characterized as lacking in humor, abstract and considered to be brilliant, eccentric imbeciles by much of the public, mathematicians rarely fit that description. Of course, branding a group with a stereotype is often a mask for insecurities. Ralph P. Boas Jr. is a fascinating counterexample to most of these inaccurate assumptions. Filled with humor, verse and mathematics, his optimism and love of life are captured just like the lions so prominently featured in the book.

So, how does an unarmed person capture a lion using only the weapons of mathematical thought? There are more ways than you would think. Over thirty different "proven" methods are given. My favorite is: "The lion is big game, hence certainly a game. There exists an optimal strategy. Follow it." It seems that every area of mathematics can be used to construct a way to capture a lion. Of course, some are more efficient than others.

The verse varies from limericks to some that were seeded by material from Shakespeare. All are quite good, although it is necessary to read some of them twice in order to capture the intended meaning. Most mathematicians have heard of Nicolas Bourbaki, the mathematical polyglot who is in fact a pseudonym for a collection of French mathematicians. When it came time to publish the first material on the mathematics of lion hunting, Boas and his colleagues chose the pseudonym, Hector Petard, from the Shakespearean line, "the engineer, hoist with his own petard"; Hamlet Act III, Scene IV. To complete the circle, Boas and friends also "arranged" for a wedding between Betti Bourbaki and H. Petard and duly announced the upcoming event.

Another main section of the book consists of reminiscences by Boas and those who knew him best. As a mathematical man of mischief and an educator, he had few equals. Several short papers describing some of his basic ideas for education are also included. These ideas share one common trait. Simple to understand and execute. No fancy or complex methods, just fundamental strategies to make mathematics more understandable.

The final part of the book consists of short anecdotes about his experiences in mathematics. Some are about fellow mathematicians, others about students and the rest about whatever seemed to happen during his eventful life. At times amusing, other times profound, but at all times interesting, they are simple notes describing how the mathematical world works.

Despite common misconceptions, there are some mathematicians who contain a bit of the sprite and Ralph P. Boas Jr. was such a person. That impishness is captured in this book, which is reason enough to read it.

Review of

Non-Euclidean Geometry 6th Edition, by H. S. M. Coxeter, The Mathematical Association of America, Washington, D. C., 1998. 336 pp., $30.95(paper).
ISBN 0-88385-522-4.

Originally published in 1942, this book has lost none of its power in the last half century. It is a commentary on the recent demise of geometry in many curricula that 33 years elapsed between the publication of the fifth and sixth editions. Fortunately, like so many things in the world, trends in mathematics are cyclic, and one can hope that the geometric cycle is on the rise. We in mathematics owe so much to geometry. It is generally conceded that much of the origins of mathematics is due to the simple necessity of maintaining accurate plots in settlements. The only book from the ancient history of mathematics that all mathematicians have heard of is the **Elements** by Euclid. It is one of the most read books of all time, arguably the only book without a religious theme still in widespread use over 2000 years after the publication of the first edition. The geometry taught in high schools today is with only minor modifications found in the Euclidean classic.

There are other reasons why geometry should occupy a special place in our hearts. Most of the principles of the axiomatic method, the concept of the theorem and many of the techniques used in proofs were born and nurtured in the cradle of geometry. For many centuries, it was nearly an act of faith that all of geometry was Euclidean. That annoying fifth postulate seemed so out of place and yet it could not be made to go away. Many tried to remove it, but finally the Holmsean dictum of ,"once you have eliminated the impossible, what is left, not matter how improbable, must be true", had to be admitted. There were in fact three geometries, all of which are of equal validity. The other two, elliptic and hyperbolic, are the main topics of this wonderful book.

Coxeter is arguably the best geometer of this century but there can be no argument that he is the best explainer of geometry of this century. While fifty years is a mere spasm compared to the time since Euclid, it is certainly possible that students will be reading Coxeter far into the future with the same appreciation that we have when we read Euclid. His explanations of the non-Euclidean geometries is so clear that one cannot help but absorb the essentials. In so many ways, Euclidean geometry is but the middle way between the two other geometries. A point well made and in great detail by Coxeter.

Geometry is a jewel that was born on the banks of the Nile river and we should treasure and respect it as the seed from which so much of our basic reasoning processes sprouted. For this reason, you should buy this book and keep a copy on your shelf.

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