Reflections of a New Editor

"The report was condemned in Parliament for being *'Unhelpful to a nonspecialist audience'*. Opposition leaders called for resignations" (emphasis added). This reporting from the BBC newsreader, and especially the highlighted phrase, certainly caught my attention. Our central Oklahoma classical music station carries BBC World Service bulletins several times a day; I was half–listening to this 7 a.m. one on a morning last September. The disposition of the report was (and remains at this writing) a serious matter, but it was the characterization "unhelpful to a nonspecialist audience" that made me put down my morning paper and start speculating. How many times do we find ourselves in departmental colloquia or at invited addresses at meetings or starting to read survey or expository articles in journals or conference proceedings only to discover that they are "unhelpful to a nonspecialist audience"? Or what about the times that curiosity or research needs draw us to topics beyond our own specialities only to discover that the available articles and monographs expect prerequisites from their readers only a specialist is likely to have? Conversely, and positively, consider the pleasure and satisfaction of hearing a great talk or reading a great article that gives you a sense of what's happening in a field you thought would always be closed to you. And, of course, let's not overlook the pleasure and satisfaction, if one can do it, of giving such a talk or writing such an article.

I begin with this issue a term as editor of these *Notices*. In all the range of material the *Notices* carries, from mathematics feature articles to reviews of mathematically connected film and fiction, to memorial articles, history (including personal history), and in all its aspects as the journal of record of the American Mathematical Society, it is my hope that the *Notices* remains interesting and satisfying to read and, above all, *helpful* to a nonspecialist audience.

It has been my honor and pleasure to serve on the editorial board of the *Notices* since the AMS launched the current "enhanced" *Notices* in January 1995. One of the honors and pleasures has been to be able to observe and admire the efforts and achievements of the editors: Hugo Rossi, Tony Knapp, and Harold Boas. All are owed a debt of gratitude by the American Mathematical Society and indeed by the mathematics community in general. I want to especially thank Harold Boas for his personal assistance in this latest transition. Many of the articles you will enjoy in this and future issues are the fruits of Harold's editorial efforts. The Society and community should also be grateful that the *Notices* continues to benefit from the services of managing editor Sandra Frost and deputy editor Allyn Jackson, as it has since its 1995 launch.

The *Notices*, like many of the Society's successful efforts, relies heavily on mathematician volunteers. All mathematical articles that appear in the *Notices* have been through an editorial process in which they are edited both for mathematical content (by an expert in the field) as well as for expository style. Both content and style readers are volunteers, often drawn from our editorial board of associate editors. The editorial board also nominates and recruits authors. And many in the mathematical community have also helped advise the *Notices* about mathematical developments that the *Notices* should cover, as well as suggesting possible authors of articles.

But of course ultimately the success of the *Notices* depends on its authors. While one way to become a *Notices* author is to accept a solicitation from the editor or an editorial board member (and many mathematicians have kindly done so), the *Notices* welcomes contributions. I would hope that all mathematicians in a position to write articles helpful to a nonspecialist audience will consider doing so for the *Notices*. For example, an author of a monograph may find that the book's introduction is easily adapted to be a *Notices* article, as are many colloquium talks or seminars aimed at graduate student audiences. Information for authors is published regularly in the *Notices*, most recently in the June/July 2003 issue (page 706). Suggestions for articles and author inquiries can also be sent to `Notices@math.ou.edu`.

—Andy Magid

Letters to the Editor

Parallelizable Manifolds

It has recently come to the attention of one of us (AW) that an old result due to Cartan and Schouten [1] and the other of us [3] is frequently misquoted in the mathematics and physics literature (on the `sci.physics.research` newsgroup as well as in published books and papers). We hope that this letter will help to prevent further misquotations.

The "theorem" is frequently stated in a form like: "Every compact, simply connected, parallelizable manifold is (diffeomorphic to) a product of 7-spheres and Lie groups."

In fact, the theorem requires a strong geometric hypothesis, namely, that among the pseudo-riemannian metrics which are invariant under the flat connection naturally associated to a parallelization, there is at least one whose geodesics are the same as those of the connection. (Without this hypothesis, the Poincaré conjecture would be an easy corollary.)

It is not hard to find counterexamples when the geometric hypothesis is dropped. For instance, Kervaire [2] proved that a product of spheres is parallelizable as long as at least one of them has odd dimension; most such products are not diffeomorphic to products of Lie groups, since a compact, simply connected Lie group has nontrivial third cohomology.

We would like to thank Robert Bryant, Rob Kirby, and Jack Lee for some interesting discussion of this matter.

—Alan Weinstein
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References

[1] É. Cartan and J. A. Schouten, On riemannian geometries admitting an absolute parallelism, *Nederl. Akad. Wetensch. Proc. Ser. A* **29** (1926), 933–946.

[2] M. Kervaire, Courbure intégrale généralisé et homotopie, *Math. Ann.* **131** (1956), 219–252.

[3] J. A. Wolf, On the geometry and classification of absolute parallelisms. I, II, *J. Differential Geom.* **6** (1971/72), 317–342; **7** (1972), 19–44.

(Received October 2003)

Shtuka and Stuka

Dear Readers,

Recently the *Notices* received from a reader a message about the term "shtuka", which was the subject of a "WHAT IS…?" column in the January 2003 issue. The reader conjectured that the term comes from the German word "Stuka", the abbreviated name for "Sturzkampfflugzeug," a World War II-era dive bomber.

Our curiosity piqued, we wrote to the originator of the term, Vladimir Drinfeld. He kindly agreed to let us publish his reply, which appears below.

—Allyn Jackson

The Russian noun "shtuka" has the following translations:

1. piece, item, unit
2. (colloquial) thing
3. trick

It stems from the German noun "Stück", which means "piece, item, unit".

In my Russian letter to David Kazhdan (1976), in which I described my proof of the Langlands conjecture for $GL(2)$ over a functional field, I used "shtuka" in the second sense ("thing") as a temporary name. Later I suggested the names "FH-sheaf" or "F-sheaf", because the definition of these objects involves the Frobenius morphism and the Hecke correspondences (F=Frobenius, H=Hecke). But the authors who wrote in English or French preferred "shtuka" (probably because "shtuka" has no meaning for them, just like "quark"). In Russian "shtuka" sounds funny, and in German it is probably quite misleading, because according to my dictionary the German "Stück" cannot mean "thing".

I know nothing about "stuka" as short for "Sturzkampfflugzeug".

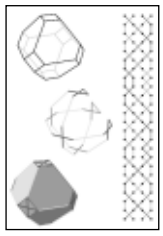
—Vladimir Drinfeld
University of Chicago

(Received October 15, 2003)

About the Cover

Plain Bob

The topic for this month's cover was taken from the book *The Mathematics of Juggling*, written by Burkard Polster and reviewed in this issue by Allen Knutson. Chapter 6 in the book is about bell ringing. The object of this principally English pastime is to cycle though all the permutations of a certain number of bells, following strict rules that effectively force the ringers to trace a Hamiltonian cycle in a Cayley graph associated to the permutation group $\mathfrak{S}_n$. For 4 bells the Cayley graph can be drawn on the edges of a truncated octahedron. The figure at the right is the score of the method, telling each of the bell ringers what his timing is in each change. I have left out the last change, which is the same as the first.



The names of sequences of changes are extremely attractive, I suppose going back for centuries. In doing the cover, I was torn between 'Plain Bob', 'Canterbury', 'St. Nicholas', or 'Single Court'. The version of Plain Bob illustrated on the cover is more correctly known as Plain Bob Minimus, to distinguish it from analgous sequences with more bells. For more on the mathematics of bell ringing, look at the article 'Ringing the changes' (*Math. Proc. Cambridge Phil. Soc.* **94**, 1983) by Arthur T. White and also `http://www.ringing.info`.

My thanks to Alexander Holroyd for expert help.

—Bill Casselman, Covers Editor
(`notices-cover@asm.org`)