Letters to the Editor

Some Statements in the Klein Protocols

I have read with interest the article on the Felix Kein Protocols in the September issue of the *Notices* and have to call the reader's attention to two surprising statements by the authors.

The first one is rather innocuous. On p. 967 we are told that Klein's "intuitive method of analogy did not meet with universal approval." This is supported by a long quotation of Poincaré which ends with: "A logician would have rejected such an idea with horror…in his mind it could never have been born." Anyone having read in detail Poincaré's opinions on logic and logicians would have considered this appreciation as a compliment paid to Klein, not to mention that a number of Poincaré's proofs lack rigor. The standards have somewhat changed but Poincaré was less careful than most of the great mathematicians of his age.

The second point is a far more annoying error of judgment. On p. 968 the authors use the expression "pearl of anthropological wisdom" to qualify the following "observations" of Steckel "on the conduct of members of different races (Germans, Jews, Poles)": "Germans calculate 71/4 minus 3/4 in the form 7 minus 1/2 = 61/2 grasping the task intuitively; Jews calculate 71/4 = 29/4…thus applying general logical rules… ." I am sorry to say that this "pearl" seems a rubbish anticipation of Bieberbach's famous (or rather infamous) article on the J type, putting in one box "Aryan" mathematics and in another box French and Jewish mathematics. I am not an expert in mathematics under the third Reich and the preceding period but found that Google is enough to find several articles putting in adequate perspective this Steckel "pearl". I find it extraordinary that this extravagant appreciation was published in an otherwise decent article in the *Notices* in 2007. I am thus led to a simple question: was the article in question (whose general interest is beyond contest) refereed? Was it read by a person distinct from any of the authors?

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Reply to Sabbagh

We'd assumed that our phrase in question, "…and the occasional pearl of anthropological wisdom…" would be read ironically. Our interest in reproducing the ensuing offensive quote was to underline the distressing anticipation of "Aryan mathematics".

—Yuri Tschinkel
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Open Source Software

I very much enjoyed reading the opinion piece "Open Source Mathematical Software", in the November 2007 *Notices*, by David Joyner and William Stein. I think the reason I enjoyed it so much was that its intersection with my daily life was not only uncountably dense but of positive Lebesgue measure. I am a statistician at the National Cancer Institute, and my work regularly involves analyzing data, computation, using and contributing open source computational software. I say "computational" because I do not wish to offend anyone, for there are those out there who think statistics is not mathematics. On the other hand, there are those out there who might wonder why the moniker "mathematical" is applied to a piece of software involving double precision arithmetic and/or optimization, and may even become suspicious in such cases.

When anyone says "Open Source" I think immediately of the GNU project, Linux, TEX/LATEX, and of course, the R project and Bioconductor. The last two of these, in case there are any readers who are unaware, are a general purpose statistical package and a statistical package devoted to molecular biology, respectively, and are the only two in my list of open source software that are of an explicit mathematical nature. I recall using Maple on occasion in the past, and will make it a point to try out SAGE.

The authors' point that open source projects are expensive (in person hours) to create and maintain is well taken. Some institutions generously support them. Everyone needs to be reminded that kudos and citations are a kind of "open source" support, in that they are free to dish out, but en masse are as important as financial support. Furthermore, as the R project is an open source project with its statistical foundations in double precision computing, optimization, and linear algebra one could conjecture that the mathematical community interested in creating and maintaining open source computational software would do well to include the R project and Bioconductor into their studies.

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History of the Kazhdan-Lusztig Conjectures

In the article "The Character Table for E_8", (*Notices,* October 2007, 1122–1134) there is a very brief discussion of the history of the Kazhdan-Lusztig conjecture on page 1128. The sentence "MacPherson suggested that their observations might be formalized using intersection homology" misrepresents that history. Lusztig had learned of intersection homology from a lecture by MacPherson in England in 1977. He and Kazhdan conjectured in 1979 that their newly defined polynomials corresponded to intersection homology of Schubert varieties. (This geometric conjecture was not written down until it was proved by Kazhdan and Lusztig in a paper published in 1980.) Two conversations among Kazhdan, Lusztig,

and MacPherson after the geometric conjecture was formulated concerned the reconciliation of the conjecture with calculations made by MacPherson in special cases, including that of Schubert varieties in Grassmann manifolds.

I apologize for this inaccuracy.

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Senderov's "Killer" Problems

I read with interest the article "Bella Abramovna Subbotovskaya and the Jewish People's University". In the summer of 1975, I was in a Soviet math camp preparing to compete in the International Math Olympiad on behalf of the Soviet Union. Before Subbotovskaya founded the Jewish People's University and long before Valera Senderov went to prison, he approached my fellow team members and me to ask us to solve "killer" problems. Valera wanted to train the Jewish students in these mathematical ideas, giving them a better chance of passing the oral exam at Moscow State University. I have archived some of these "killers" on my website http://www.tanyakhovanova.com/coffins.html for those of your readers who are curious to see them.

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Mathematical Attitude

We recently received our copy of the excellent AMS publication *2007 Assistantships and Graduate Fellowships in the Mathematical Sciences*. Next year we will be conducting a search to fill a tenure-track position so the information on "Current Employment Trends in the Mathematical Sciences" [Pages vii–x] was of particular interest.

But, in the section titled "Employment Options for Mathematicians" I was shocked, amused, disappointed, but not surprised by the sentence which reads: "If you believe that you may want to pursue a career in business and industry, it is important to seek a graduate program that will provide you with a versatile foundation in mathematics as well as skills in communication, teamwork, and problem solving."

This is great advice, but why not for everyone? The implication seems to be that college professors do not need to be versatile in mathematics, or to worry about communications or teamwork, or problem solving. Go in your office, keep the door shut most of the time, study, think, and publish.

Does the attitude expressed in your sentence capture the collective will of our increasingly marginalized profession? Mathematics (including actuarial science) now represents less than 1% of bachelor's degree recipients [NSF 2004 data]. There are many reasons for the decline in the study of mathematics, and our attitude may not be the most significant. But, our attitude is something we can actually control.

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Correction: "Crystals That Nature Might Miss Creating"

As the author of the recent article "Crystals that nature might miss creating" in the *Notices* (**55**, No. 2, February 2008), which characterized two crystal structures by certain properties of symmetry, I must notify *Notices* readers that the crystal structure that I named the K_4 crystal was already known in crystallography. I was informed by Stephen T. Hyde, professor and Federation Fellow in the Applied Mathematics Department of the Research School of Physical Sciences, Australian National University, that the first description of the structure goes back to a pioneer of the area, A. Wells, who called it "(10,3)-a" (A. F. Wells, *Three Dimensional Nets and Polyhedra*, Wiley, 1977), and that Michael O'Keeffe and colleagues have discussed this structure in some detail and renamed it "srs" due to its chemical relevance, in "Three-periodic nets and tilings: regular and quasiregular nets" (Olaf Delgado Friedrichs, Michael O'Keeffe, and Omar M. Yaghi, *Acta Cryst.* **A59** (2003), 22–27). Furthermore, the structure also crops up in liquid crystals, as it defines one labyrinth of the "Gyroid" 3-periodic minimal surface (it is also called the "medial graph" in "Medial surfaces of hyperbolic structures", G. E. Schroeder, S. J. Ramsden, A. G. Christy, and S. T. Hyde, *Eur. Phys. J. B* **35** (2003), 551–564). See also S. T. Hyde and S. J. Ramsden, "Polycontinuous morphologies and interwoven helical networks", *Europhys. Lett.* **50** (2000), 135–141.

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Submitting Letters to the Editor

The *Notices* invites readers to submit letters and opinion pieces on topics related to mathematics. Electronic submissions are preferred (notices-letters@ams.org); see the masthead for postal mail addresses. Opinion pieces are usually one printed page in length (about 800 words). Letters are normally less than one page long, and shorter letters are preferred.

Identifications

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