International Study Group on the Relations Between
HISTORY and PEDAGOGY of MATHEMATICS NEWSLETTER

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Editorial

Many thanks to all of you for your messages after the distribution of the last HPM Newsletter. I apologise for not getting the numbering correct, having mistakenly numbered it 44 instead of 45, hence this copy is now the 46th newsletter. My thanks to all the distributors who sent out copies to people on their mailing lists. It gives me great pleasure to announce that the HPM Newsletter is now on line, thanks to the work of Karen Dee Michalowicz. You can find it at

http://www.sju.edu/~ambruso/hpm/Welcome.html

History and Pedagogy of Mathematics

The home page of the HPM website

Since this edition of the HPM Newsletter is sent to all distributors at the same time, the current issue may not yet be on line, but an Americas home page is being developed.

Those of you living in the Americas are encouraged to send information about meetings, workshops, lectures, etc. to Karen Dee Michalowicz who will see that they are added to the HPM Americas web site, "Upcoming activities".
Karen can be reached at karendm@aol.com.

Peter Ransom, The Mountbatten School

Establishment of a History of Mathematics committee in Hungary

On the initiative of Katalin Munkácsy and László Filep, the János Bolyai Mathematical Society of Hungary has decided to form a standing committee for dealing with all matters concerning history of mathematics including its relation to pedagogy, i.e. to the teaching of mathematics. The committee wants to put special emphasis on the history of mathematics in Hungary, and to build up fruitful relations with sister committees in other countries, as well as with ICHM. Moreover, it intends to study the connections between history and pedagogy of mathematics.

The board of the society asked 12 of its members to participate in the work of this History of Mathematics Committee. Professor Ákos Császár, member of the Hungarian Academy of Sciences, was nominated to be chairman, and Katalin Munkácsy, associate professor of the Teacher Training Faculty of Eötvös University of Budapest became its secretary.

The committee held its inaugural meeting on October 4, 2000 in Budapest. Seven members were present, the chairman and secretary, as well as: László Filep, College of Nyíregyháza (myself), István Gazda, Hungarian Science History Institute, Elemér Kiss, University of Tirgu Mures, Romania, Mihály Szalay, Eötvös University, Tibor Weszely, University of Tirgu Mures, Romania.

At the first meeting the committee discussed the following topics:

8. A few years later is found the statement (by A. L. G. Demonville?) that "nothing multiplied by nothing is one" i.e. $0 \times 0 = 1$

9. S. G. Abel (father of the famous N. H. Abel, 1802-1829) wrote a textbook which contains $1 + 0 = 0$

10. Surprisingly, even the great Shinivasa Ramanujan (1887-1920) got the wrong result
$1^2 + 2^2 + 3^2 + \ldots = 0$

The above examples show that there was a lack of understanding of the real nature and behaviour of zero.

References
R. C. Gupta: 'Mathematical Lapses' *Ganita-Bharati* **18**, (1996) notes 1, 2, 4, 5
R. C. Gupta: *Ganita-Bharati* **4**, 121 note 3
E. R. Hogan: *Historia Mathematica* **3**, 405, 414 (1976) note 6
Datta & Singh: *History of Hindu Mathematics, vol 1.* p246 note 7
A. De Morgan: *The Encyclopaedia of Eccentrics.* La Salle, 1974, pp292-293 note 8
A. Stubhaug: *N. H. Abel and his Times.* Springer, Berlin, 2000, pp89 and 135 note9

The scientific heritage of Abu Sa'id Ahmad ibn Mohammad ibn 'Abd al-Jalil al-Sijzi

On 25 January 2001, I gave a lecture in the city of Zabol in the southeastern Sistan province of Iran on the *Scientific heritage of Abu Sa'id Ahmad ibn Mohammad ibn 'Abd al-Jalil al-Sijzi.* He was an eminent Iranian mathematician and astronomer of the tenth century AD, born in Sistan province (al-Sijzi means native of Sistan). He was especially powerful in geometry. He wrote in Arabic, and we know about 60 works by him among which about 40 have remained and only a few of them have been published.
An interesting treatise by him on *Geometrical Problem Solving* which has striking similarities with George Polya's *How to Solve It?* was translated into English by Dr. Jan P. Hogendijk (Utrecht University, Holland) with an introduction and commentary. It was published in Iran together with an edition of the Arabic text by Dr. Hogendijk and a Persian translation by Mohammad Bagheri (Tehran, 1996). This publication was mentioned in *Have You Read?* column of the *HPM Newsletter No. 42* (November 1997). Abu Rayhan al-Biruni, the famous Iranian mathematician, astronomer and Indilog of the 10th century AD has admired al-Sijzi for the invention of a boat-shaped astrolabe which is based on the notion of the rotation of the earth in a stationary universe.

The lecture was given in Zabol University and was warmly received by the audience consisting of professors, students, and teachers, mostly inhabitants of Sistan.

Mohammad Bagheri

A report of ICGK 2000, Kashan, Iran

An International Conference on Ghiyath al-Din Jamshid Kashani (al-Kashi) was held in Kashan University (Iran) on 9-11 November 2000.

This was one of the many activities that took place in Iran for the Mathematics World Year 2000. Ghiyath al-Din Jamshid Kashani (d. 1429) was born in Kashan where he was engaged in mathematical and astronomical studies before his departure for Samarkand in 1421. This eminent Iranian scientist joined Ulugh Beg's scientific circle in Samarkand and was supported by him. In Samarkand Kashani designed and supervised the observatory made for Ulugh Beg. Kashani is very famous for his accurate calculation of π.

Some of the invited speakers who presented papers on the scientific heritage of Kashan were
- Dr. Yvonne Dold-Samplonius (Heidelberg), *Al- Kashi's method to calculate arches*
- Dr. Jan P. Hogendijk (Utrecht) *Al- Kashi's determination of 2π in 16 decimals and its role in the history of mathematics*
- Dr. Sergei S. Demidov and Dr. Miryam M. Rozhanskaya (Moscow) *On the study of the scientific heritage of Jamshid al- Kashi in Russia and Central Asia*

A paper entitled *Al- Kashi's treatise on determining sine of one degree and analogous treaties of other astronomers of observatory of Ulugh Beg and of their students* by Professor Boris Rosenfeld (Pennsylvania) was read in the congress.

A piece of theatre based on the life of Kashani was performed in Kashan on the occasion of the congress. A video film entitled *A Qubba for Al- Kashi* made by Dr. Yvonne Dold-Samplonius was shown and warmly appreciated in the congress. For her precious work on Kashani's scientific heritage, Dr.

Yvonne Dold-Samplonius was recognised as *Honorary Citizen of Kashan* during a special ceremony arranged by the municipality of Kashan. A workshop on the astrolabe organised by Dr. Jan P. Hogendijk and Mr. Reinoud Koornstra was also an attractive part of the congress. In the first day of the congress, the participants attended the special ceremonies of inauguration at two statues of Kashani, and the constructional site of the observatory of Kashan University that will be named after Ghiyath al-Din Jamshid Kashani. During the congress days, the participants also enjoyed marvellous sightseeing including the historical buildings of Kashan. The congress was sponsored mainly by the Iranian Mathematical Society and The Iranian National Committee for WMY2000.

Mr. Parviz Shahridri, an eminent Iranian scholar in the history and pedagogy of mathematics, introduces himself to the statue of al-Kashi in the campus of Kashan University, Iran

Alongside the ICGK 2000, a conference on computational mathematics and astronomy was also held in Kashan University.

Mohammad Bagheri

Reviews

In you would like to be involved in reviewing books or magazines for this section, please send your contact details and area(s) of interest to the editor who will forward books or magazines for review as and when they become available.

If you wish for a book to be reviewed, please send it to the editor who will arrange for it to be reviewed.

Focus Issue, Mathematics History, "Mathematics Teacher" Vol 93, No. 8, November 2000,

National Council of Teachers of Mathematics, Reston, VA USA

In November 2000, the National Council of Teachers of Mathematics (NCTM) published a focus issue of their journal, *Mathematics Teacher*, dedicated to mathematics history. The journal, written for secondary teachers, featured articles and activities by some very credible mathematics historians. Some of the authors are Shai Simonson writing on the mathematics of Levi ben Gershon; S.I.B. Gray writing about the mathematics in the Age of Jane Austin; Patricia Wilson on strategies for using mathematics history; Dane Camp on Mandelbrot; and Lawrence Shirley writing about using costumes in the classroom. Other articles are on Kepler and Wiles, Felix Klein, and John Napier.

The beauty about this publication is that it is very usable by the secondary teacher. Unlike many scholarly publications that give us a picture of the mathematics of a certain era or of a certain mathematician, this journal helps the teacher see how the information can be used in the classroom.

As a collector of old and rare books I was particularly interested in the Gray's discussion of the content in British texts in the early 1800's. She details problems in early 19th century British texts that not only give the reader a cultural, historical and sociological view of the times, but also give students the opportunity to see different algorithms. The problems are fun!

In the journal one can also find some web sites where resources and activities in the history of mathematics can be located. In addition there is