Logo competition

We received entries from Giuseppe Ferrera, Paul Garcia, Kevin Morley and Sjoerd Schaafsma.

At the present moment the judges are considering the nine entries. The winning entry will be shown in the next issue of HPM News.

Cultural Unity of Ancient Mathematics: the example of the Surveyor's Rule

According to the theory of the Diffusion of Culture, various widespread practices and beliefs are the product of certain special circumstances. The theory tends to regard similar ideas and practices as evidence of historical connection. For instance the universal use of weekdays in the same order and with similar names indicate that the special idea of using a week of seven days must have originated at a single place and then diffused over the globe. In mathematics, an interesting case is that of the Surveyor's Rule

$$S = \frac{(a+c)}{2} \cdot \frac{(b+d)}{2} \qquad (1)$$

for the area of a quadrilateral ABCD of sides AB = *a*, BC = *b*, CD = *c*, DA = *d* as shown in Fig.1.

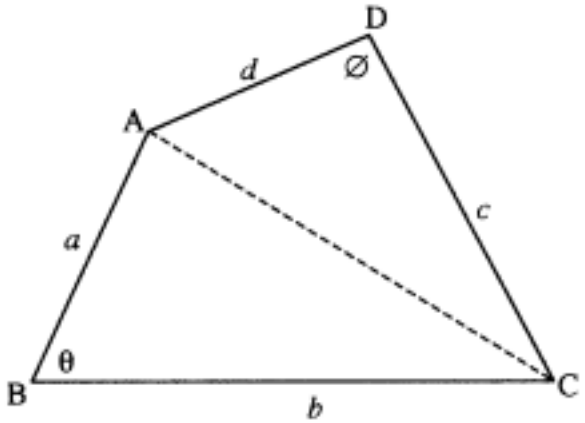

Fig. 1

I first mention the universal popularity of the rule (1) as follows.

(i) Mesopotamia
The rule (1) was supposedly used in some Mesopotamian metro-mathematical texts from Uruk IV (towards the end of the 4th millennium BC). It was used in the pre-Babylonian or Sumerian texts (3rd millennium BC), and in the Old Babylonian mathematical texts (c.2000-c.1600 BC) YBC 4675 (in which the area of a figure of sides 17, 290, 7 and 310 is computed, the answer being 3600) and YBC 7290. In the late Babylonian period (3rd century BC), the formula (1) was the standard method for computing relevant areas.

(ii) Egypt
In the famous *Ahmes* (or *Rhind*) *Mathematical Papyrus* (c. 1650 BC), Problem 52 seems to have been solved by rule (1). Later on Egyptian inscriptions (dated c. 100 BC) in the Horus temple at Edfu do explicitly employ (1) e.g. for computing the area when the sides are 16, 4, 15, and 32, the answer given being 588.

(iii) Europe
The rule (1) was used in some ancient Greek works such as the *Liber geëponicus* and the pseudo-Heronian *Geometrica*. It was used by the Roman surveyors and is also found in the *Propositiones ad acuendos juvenes* of Alcuin (c.735-840 AD) and in the *Geometry* of Gerbert (940-1003) who became Pope Sylvester II in AD 999. Similar rules were used quite late in Germany (c.1400) and Russia.

(iv) China
The anonymous Chinese work *Wu Tshao Suan Ching* or *Wucao suanjing* ("Computational Canon of the Five Administrative Departments") of about 400 AD computes the area of a quadrangular field of sides 35, 25, 45 and 15 paces by using (1). The same rule is used in another Chinese work called *Xiahou Yang suanjing* ("Xiahou Yang's Computational Canon").

(v) India
The first explicit statement of (1) in India is found verbally in the *Brahmasphuta Siddhanta* (XII, 21) of Brahamgupta (AD 628). He clearly says that the rule gives gross (sthula) area. For accuracy he gives

$$\text{Area} = \sqrt{(s-a)(s-b)(s-c)(s-d)}$$
$$\text{where } s = (a+b+c+d)/2$$

Sridhara (c.750AD) in his *Patiganita* (verse 112) has quoted Brahmagupta's verbal rule for (1) only to criticise it. Anyway, as a practical formula, the rule (1) is found in many subsequent Indian works such as *Ganitasara-sarigraha* (VII, 7) of Mahavira (c.850 AD).

(vii) Arabia

The rule (1) was known to some Arab authors during medieval times. For instance, it is found in the *Ghunya al-Hussab* ("Reckoner's Wealth") of Ahmed ibn Thabat (c.1200 AD). Abu'l Wafa (10^{th} century) also knew it.

Thus we find that the use of the antique Surveyor's Rule (1) was quite widespread among various ancient and medieval cultural areas. Some other relevant remarks may also be made as follows:

- Historically speaking, the rule (1) was also used to find the area of a triangle by assuming it to be a quadrilateral in which one side is zero, i.e. by taking $d = 0$ say. So, for a triangle of sides a, b, c, we have
  area $= (a + c).b/4$ (2)
  The area obtained in (2) is always in excess of the true area. Moreover, the result is not unique, as we may also derive the expressions $(b + c).a/4$ and $(a + b).c/4$ for the area of the triangle by similar argument.
- Mathematically, the rule (1) gives exact area only in the case of a rectangle (including the square). In all other cases it yields a higher result. For we have (see Fig. 1)

  $$ab + cd \geq ab\sin\theta + cd\sin\varnothing$$
  $$= 2\Delta ABC + 2\Delta ACD$$
  $$= 2(\text{area ABCD}).$$

  Similarly, $bc + ad \geq 2(\text{area ABCD})$.
- Paradoxically, the rule (1) will yield the area of non-existent figures. E.g. if $a = 13$, $b = 4$, $c = 5$, $d = 2$, we get $S = 27$ by (1), yet the figure cannot be drawn (why?).
- Practically, the Surveyor's Rule (1) is a good formula because it is based on averaging. It continues to be used even today to approximate the area of plane quadrangular fields by just measuring the four bounding sides. Otherwise, a mere four sides are not enough to fix or define a quadrilateral uniquely. So it is not theoretically possible to find any formula for exact area in terms of four sides alone.

References

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R. C. Gupta, "Primitive Area of a Quadrilateral", *Ganita Bharati*, Vol.19 (1997), pp. 52-59

R. C. Gupta, "Something is Better than Nothing", *Ganita Chandrika*, New Series, 2(3) (2001), pp. 22-25

R. C. Gupta
Jhansi, India

The *HPM* notes of J. Vicente Gonçalves

J. Vicente Gonçalves (1896-1985) was an important Portuguese mathematician of the first half of the twentieth century. He taught at Coimbra University for almost twenty-five years. In 1940, he went to Lisbon University, where he worked until his retirement in 1966.

One of his contributions to the improvement, development and dissemination of Portuguese mathematics research was the foundation, in 1950, of the Mathematics Section of *Revista da Faculdade de Ciências da Universidade de Lisboa* (2^{nd} series). He was its editor until 1966. Vicente Gonçalves published almost 100 papers in several scientific journals. A part of his work can be found in the section "**Historiae ac Pedagogiae de Minutiis**" (as he called it) of the *Revista da Faculdade de Ciências de Lisboa* (2^{nd} series) -- the following 26 *HPM* notes of J. Vicente Gonçalves:

1. La limite de Walsh, vol. I, **1**:187-188 (1950)
2. Calcul abrégé d'une suite de Sturm, vol. I, **1**:189-200 (1950)
3. Calcul abrégé d'un résultant, vol. I, **1**:201-204 (1950)
4. Remarque sur le calcul abrégé d'un résultant, vol. I, **2**:403-404 (1951)
5. Une idée de Cauchy, vol. I, **2**:405-408 (1951)
6. Les formules de Ruffini, vol. I, **2**:408-409 (1951)
7. Sur le reste de la formule de Taylor, vol. II, **1**:89-90 (1952)
8. Sur un développement de $f(x,y)$, vol. II, **1**:91-92 (1952)
9. Une matrice régulière, vol. II, **2**:349 (1953)
10. Les matrices à termes nuls, vol. II, **2**:350 (1953)
11. L'interpolatrice de Newton, vol. II, **2**:351-352 (1953)
12. La continuité uniforme, vol. II, **2**:353-360 (1953)
13. Sur la $n^{ième}$ formule de Taylor, vol. III, **1**:187-190 (1953/54)
14. Sur la méthode de Newton, vol. III, **1**:191-196 (1953/54)
15. Un raffinement des séries de Pringsheim, vol. III, **1**:197-199 (1953/54)
16. Sur la décomposition de cotg x, vol. III, **1**:200-202 (1953/54)
17. Démonstration du théorème de Binet-Cauchy, vol. III, **2**:327-329 (1954/55)
18. Démonstration du théorème de Hamilton-Cayley, vol. III, **2**:330 (1954/55)
19. Les développements de tg x et cotg x, vol. III, **2**:331-332 (1954/55)

20. Sur la décomposition des fractions rationnelles, vol. V, **1**:171-176 (1955/56)
21. Quelque remarques sur la série alternée décroissante, vol.VI, **2**:331-335 (1957/58)
22. Amélioration des approximations newtoniennes, vol. VII, **1**:133-136 (1959)
23. Une retouche dans la méthode de Newton, vol. VII, **1**:137-139 (1959)
24. La règle de Newton pour les racines rationnelles, vol. VII, **1**:140 (1959)
25. Deux critères de convergence, vol. VII, **2**:371-372 (1959)
26. Suite à une note sur la série alternée, vol. VIII, **1**:121-123 (1960).

These notes, in the areas of analysis, algebra and history, are essentially improvements, remarks or short demonstrations of well-known mathematical results. That is why this work fits perfectly in a section of History and Pedagogy.

Professor Vicente Gonçalves also used to introduce these notes in his lessons (to first year university students). He was a brilliant teacher and a prolific mathematician with a penchant for introducing his research results in his lessons and finding mathematical inspiration in the mathematical topics he taught.

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C. Costa, *José Vicente Gonçalves: Matemático... porque Professor!*, (PhD thesis), Universidade de Trás-os-Montes e Alto Douro, Portugal, 2000.

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The Portuguese National Seminary on History of Mathematics

The Portuguese National Seminary on History of Mathematics (*Seminário Nacional de História da Matemática* – SNHM) was founded in January 1988, following the celebrations of the bicentenary of the death of the distinguished Portuguese mathematician José Anastácio da Cunha (1744-1787). There were a number of meetings on History of Mathematics related to this celebration in several parts of Portugal, namely in Coimbra, Évora and Lisboa. In Lisboa an International Meeting was held in which da Cunha's work was analysed in his aspects of a writer, a cultivated man of his age and a mathematician. Being conscious of some very important gaps concerning both the popularisation and the research in History of Mathematics in Portugal, (especially in what concerned Portuguese mathematics) some people got together. Members of the Universities of Lisboa, Coimbra, Porto and Minho decided to create a structure that could promote the elaboration of a national network of contacts between researchers and other people interested in History of Mathematics. This could simultaneously promote collaboration and intervention in themes in this area. The importance of the integration within the international community of historians of mathematics was not forgotten, as the presence of researchers from other countries in every national meeting has enhanced. Since the mid-nineties the Seminary has become a section of the Portuguese Mathematical Society (*Sociedade Portuguesa de Matemática* - SPM).

SNHM has been making its action felt in a constant way since the date of its foundation. As an organised structure integrating SPM, by means of the regular organisation of national meetings or thematic conferences of international character, and individually, by means of its members. There have been interventions that span from popularising sessions in secondary schools to the elaboration of textbooks for university teaching and the edition of proceedings from conferences on the History of Mathematics.

The National Meetings of the SNHM

1st Meeting: *Braga, University of Minho, April 1988.* ***Invited speaker:*** Ubiratan D' Ambrósio, then at the University of Campinas, Brazil.

2nd Meeting: *Lisboa, Interdisciplinary Complex of the University of Lisbon, November 1988.* ***Invited speaker:*** Christian Houzel, University of Paris XIII.

3rd Meeting: *Lisboa, Interdisciplinary Complex of the University of Lisbon, March 1989.* ***Invited speaker:*** Jean Dhombres, CNRS and University of Nantes.

4th Meeting: *Coimbra, Departament of Mathematics of the University of Coimbra, April 1990.* ***Invited speaker:*** Ivor Grattan-Guinness, The Royal Society, London.

5th Meeting: *Lisboa, Faculty of Sciences, March 1993.* ***Invited speaker:*** Eduardo Ortiz Imperial College, University of London.

6th Meeting: *Coimbra, Departament of Mathematics of the University of Coimbra,*

May 1994. ***Invited speaker:*** John Fauvel, Open University, Milton Keynes.

7th Meeting: *Coimbra, Departament of Mathematics of the University of Coimbra, November 1995.* ***Invited speakers:*** Catherine Jami, CNRS, Paris, and Han Qi, Institute for the History of Natural Science, Beijing.

8th Meeting: *Porto, Department of Pure Mathematics of the Faculty of Sciences, July 1996.* ***Invited speakers:*** Ubiratan D' Ambrósio, Brazilian Society for the History of Science, Universidade Estadual Paulista, and Circe Mary Silva da Silva, Universidade Estadual do Espírito Santo, Brazil.

9th Meeting: *Coimbra, Departament of Mathematics of the University of Coimbra, November 1997.* ***Invited speakers:*** Ubiratan D' Ambrósio and Eleanor Robson, University of Oxford.

10th Meeting: *Monte da Caparica, Universidade Nova de Lisboa, January 1998.* ***Invited speaker:*** Ivor Grattan-Guinness.

11th Meeting: *Departament of Matematics of the University of Aveiro, January 1999.* ***Invited speaker:*** Eberhard Knobloch, Technische Universität Berlin.

12th Meeting: *Lisboa, Interdisciplinary Complex of the University of Lisbon, December 1999.* ***Invited speakers:*** David Crilly, Anglia University, Cambridge, and Óscar Abdounur, University of S. Paulo, Brazil.

13th Meeting: *Escola Superior de Educação de Castelo Branco, May 2001.* ***Invited speaker:*** Gert Schubring, University of Bielefeld.

14th Meeting: *Departament of Mathemátics of the University of Évora, April 2002.* ***Invited speakers:*** Hans Niels Jahnke, University of Essen, and Reinhard Kahle, University of Tubingen.

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The Circulation of the *HPM Tongxun* and Its Relevance to the Mathematics Teacher Community in Taiwan[1]

I. Introduction

The first issue of the *HPM Tongxun* (HPM Newsletter) was published on October 5, 1998. Since then, about ten issues of the Newsletter have been published for years to follow. Due to that fact that this was initiated to help organize the HPM 2000 Taipei Conference, the title of the first nine issues is called *HPM Taipei Tongxun* instead. As well known in the mathematics education community, HPM, an international study group affiliated with the International Commission on Mathematical Instruction (ICMI), was begun in the early 1970s to explore relations between history and pedagogy of mathematics. Since the International Congress on Mathematics Education (ICME), organized by the ICMI every four years, takes place a couple of days before or after in some city, the HPM satellite meeting will be held, as expected, in neighboring area. This is to encourage participants, especially those from abroad, joining both of the meetings.

When I attended the HPM 96 Braga Conference in 1996, a satellite meeting of the ICME-8 (in Spain), I was invited to organize the satellite HPM meeting in Taipei in 2000 just because the ICME-9 was decided to take place in Tokyo in the same year. In order to help local colleagues to be familiar with the HPM issues and in turn to encourage them to expose in the international academic occasion, I began to publish the Newsletter and to circulate in the mathematics education community. As suggests the title, the theme of the Newsletter is to encourage mathematics teachers incorporating history into their classrooms. However, proper attention is also paid to the history of mathematics *per se* since historical literacy is indispensable for those who like to improve their teaching in the perspective of the HPM.[2] Nevertheless, the most important role the Newsletter has been playing is to serve a forum for teachers who want to share their teaching experiences including those not basically related with the HPM. Moreover, since there is no official organization like mathematics teachers association in Taiwan, the publication of the newsletter also provides an avenue, which apparently allows them to join together in a "virtual" community.

In this article, I will trace back the short history of the still young Newsletter by serving a tour guide into the materials appeared in its issues. And see how it plays a due role in promoting the activities in terms of the HPM and research in the history of mathematics in the academic circle. On the other hand, a preliminary study is undertaken in order to understand just how circulation of the Newsletter can be relevant in the mathematics education community of Taiwan.

HPM台北通訊

發刊詞

The front page of the first issue
5 October 1998

II. Theme of the HPM 2000 Taipei Conference[3]

The Conference, titled "History in Mathematics Education: Challenges for a new millennium" (HME)", was held from August 9-14, 2000, in Taipei, Taiwan. And it was hosted by Department of Mathematics at National Taiwan Normal University (NTNU), with funding from the National Science Council (NSC) and others. I, serving as the local organizer, was entrusted by the then chair of the HPM, Prof. Jan van Maanen (University of Groningen) at the recommendation of the late Prof. John Fauvel (1947-2001) in Braga, Portugal in 1996.

HME is one of the satellite meetings of ICME-9, the International Congress on Mathematics Education being held in Japan from 30 July to 6 August 2000. The HME meeting in Taiwan is affiliated to HPM, the International Study Group on the Relations between the History and Pedagogy of Mathematics. It will follow the examples set, every four years since 1988, for an HPM satellite to the International Congress. Thus it follows the pattern whereby an HPM meeting was held in Florence in 1988, next to Budapest's ICME-6; in Toronto next to Quebec's ICME-7 in 1992; and in Braga in 1996, following Sevilla's ICME-8. The main purpose of the Taipei HME is, therefore, to create a forum entirely for those concerned about the issues of relating history and pedagogy of mathematics. During the meeting, participants will be encouraged to explore and elaborate just how history of mathematics could be integrated in the three key components of mathematics education—teaching, learning, and curriculum—as well as in the education and training of teachers themselves.

Taiwan, called "Formosa" by Portuguese sailors in recognition of its outstanding beauty, has become used to both observing and sometimes participating in the vigorous relations between the West and the East from the 16th century onwards. Due to Taiwan's special location and historical experience, the Taipei HME is pleased to provide an opportunity, in the very beginning of the new millennium, for participants from all over the world to meet and sit with each other in friendship around the round table, share our knowledge of the ways in which mathematical culture was transmitted from one place to another, and share an understanding that we still have much to learn from one another.

The Taiwan HME is expected to attract some 300 delegates including 150 international and 150 local participants: historians, mathematicians, and mathematics educators as well as teachers around the island. At least 50 presentations concerning local contexts will be encouraged in order to enrich the multicultural concerns of HPM (local, that is to say, to wherever the presenter comes from). A dialogue between West and East in terms of the experience of students and teachers in their communities is, therefore, a strong focus that the local organizers would like to share with all participants, especially the international ones.[4]

III. Editing and Publishing the Newsletter

The editor of the Newsletter is Ms. Hui-Yu Su, one of my former graduate students and now teaching at a senior high school in Taipei City. Her editorial board includes fourteen members who are qualified high school mathematics teachers.[5] Almost of them are in-service teachers but now back to NTNU to join the doctoral / master program in the history of mathematics / HPM. As the publisher of the Newsletter, I act as a role of supervisor. Toward the end of every month (except in summer and winter vacations), Hui-Yu Su who is now still joining my seminar on the history of mathematics / HPM weekly will talk to me just what can be covered in the next issue. If there are not sufficiently many submitted articles to be considered, I will suggest to the board members the appropriate topic that they can contribute. In fact, it is an obligation for them to write relevant articles for the Newsletter.

Apparently due to the reason, special issues of the Newsletter covers the topics like an annotation of the *Suan Shu Shu* (no later than 186 B.C), a bamboo text on mathematics most recently discovered in China, which is one of the team works of the board members.

The Newsletter is published ten issues for each year. In addition to its print form, we also provide an electronic version on the website: http://www.math.ntnu.edu.tw/~horng. It is published regularly on the fifth day of each month. Yet due to winter and summer vacation in school schedule, February and March issues, August and September issues of each volume will be put together to become only one issue respectively. In addition, since its first issue was begun on October 5, 1998, so the Volume I of it contains only three issues. Moreover, Volume 3 contains only nine issues since we also merged June and July issues in order to save energy for organizing the Conference. Up to now (April 2002), we have published thirty-five issues in total, which covers as many as 556 (A4) pages. As to the sponsor for the publication and circulation, part of the NSC funding for the Conference went, as proposed, to meet the related payment. But that was affordable only for the first 19 issues or so. Thereafter, I could only spare some pocket money from the NSC sponsored research project to support the printing – some five or six hundred copies for each issue.

The circulation of the Newsletter takes the advantage of the high school teacher community, most of whose members are the NTNU alumni. As always happened in the publication of periodicals, the Newsletter attracted great attention from the community at its very beginning. Yet, the HPM is not anything like education reform issue to which the teachers should pay attention. Therefore, the copies circulated dropped quickly from three thousand to the now stabilized five hundred despite that it is free for interested readers. To this small population of readers, I should thank my former students who took my course on the history of mathematics at their senior year and that offered them an opportunity to know something about the HPM. On the other hand, we send some twenty copies to colleagues (basically historians of Chinese mathematics or advocates of the HPM) in Hong Kong, China and the USA, whose constant enthusiasm about the HPM at least adds one piece of evidence to the "virtual" existence of the international Chinese community of the HPM.

Apparently it is due to this international community, we are able to share not only HPM contributions but also studies in the history of mathematics for its own sake. For example, the aforementioned special issue on the *Suan Shu Shu* attracts a lot of attention in the community. On the other hand, some other special issues are also edited for topics like Islamic mathematics after the 911 tragedy in 2001. In this connection, authors of the related articles are encouraged to share their multicultural concern in educational setting, exploring in depth just how we can learn the legacy of Islamic mathematics from, for example, the inheritance problems associated with the Koran law.

IV. Content of the *HPM Tongxun*

From the inception of the Newsletter, we have indeed a very clear goal to attain, namely, promoting the HPM. However, what should and could be covered in it is a kind of vague idea to us. For now, I can only report that the Newsletter is very successful by an "amateur" standard. We feel easy and relaxed for the time being but have a vision in the future.

By now articles appeared in the Newsletter concern the following themes:

• Circulating among local colleague problems and possibilities that are central in the international HPM community. Take for example, messages from John Fauvel and Jan van Maanen eds., *History in Mathematics Education: An ICMI Study* (2000).

• Creating a forum for local teachers / graduate students who like to know what is the HPM all about.

Special issues are edited:
(1) Reflection on Helena Pycior's "Biography in the Mathematics Classroom" (Vol. 2(10));
(2) Critical discussion on the presentations for the Conference (Vol. 3(8/9), 3(10));
(3) Annotation of the former Han dynasty bamboo text of mathematics, the *Suan Shu Shu* (Vol. 3(11));
(4) Book review on Chinese translations of popular mathematics publications in Taiwan (Vol. 3(12), 4(1));
(5) Reflection on John Fauvel's articles on HPM (Vol. 4(6), 4(7));
(6) Islamic mathematics (Vol. 4(11), 4(12));
(7) Annotation of the *Suan Shu Shu* again (Vol. 5 (2/3)).

Reports on research projects or sponsored seminar (granted by the NSC) related with the HPM (Vol. 4(12), 5(2/3)).
Reflections on issues of mathematics education.

- Worksheet / teaching project / "virtual" speech draft on HPM (Vol. 3(10), 4(8/9), 4(10))
- Introduction of mathematics websites (Vol. 2(7), 2(8/9), 3(10), 4(1), 4(8/9)).
- Examples of "proof without words" (Vol. 2(2/3), 2(4), 2(12)).
- Multicultural Mathematics (Vol. 3(4), 3(6/7)).
- Information about the newly arrived journals or books on the related issues
- Articles on the History of (Chinese) Mathematics.

V. Feedback from the Readers

As Hui-Yu Su reports in Vol. 5(4) of the Newsletter, we collect one hundred questionnaires, each of which include nine questions. For Question 1, the questionnaire shows a population structure of the readers as follows: graduate students (7/100), prospective high school teachers (70/100), and high school teachers (23/100). Question 2 is about the subscription background. Among those who fill the questionnaire, 26 out of 100 are subscribers who receive free copy of the Newsletter through email attached file or print form. For those who are not subscribers, they are accessible to the Newsletter through the website, school library or their teachers' recommendation. As to the reading frequency of the Newsletter (Question 3), there are 21 out of 100 who never miss any issue. Among the other readers, 35 read the Newsletter only occasionally while the still other 44 come up to it when they search for related references.

About what kinds of articles (if any) they think more interesting than others (Question 4), their answers can be put into the following category: historical (57), related to teaching (67), popular math reader recommendation (12), math homepage recommendation (19).[6] Such a response is also consonant with their answer to the question: From what kinds of articles you think you can learn more? (Question 6) In fact, to this question their answer-patterns are as follows: historical (61), teaching (60), popular maths reader recommendation (12), and maths website recommendation (13). However, almost the same proportion of answers is given to the question: What kinds of articles you think more difficult to read? (Question 5) In fact, for the last question, we have the following answers: historical (55), teaching (24), popular math reader recommendation (19), math homepage recommendation (6), none (1).

It deserves to note that articles on the history of mathematics are as most needed as difficult for reading. This may well explain why the Newsletter proves successful in providing a forum for high school mathematics teachers to learn what is about the HPM. Apparently in doing so, they think that the history of mathematics should always come first. In fact, a similar concern is also expressed in their answer to Question 7: In what way you think reading of the Newsletter can be beneficial? In addition to their choices of the answers as follows: teaching (62), research (55), general education literacy (23) etc., they also write down some more specific comments on how the reading of the Newsletter would do help to their study or career development. For example, `some of them claim that their attitude towards teaching has been changed quite a lot. Some others emphasise that they get to know how to integrate history into their teaching. Still, they also come to realize that mathematical knowledge has many aspects. And that realization makes them feel closer to mathematics *per se*. In summary, they all know how to improve their (future) teaching in terms of the HPM, if necessary.

Finally, Questions 8 & 9 are to ask for their suggestion on the coverage and editing. As to what kinds of articles should be covered in the Newsletter (Question 8), their response is as follows: historical research (14), teaching related (55), popular science readers' recommendation (14), website recommendation (12) etc. In order to encourage the editorial board to hold on, the readers like to see in the near future the Newsletter can be edited and printed in a more attractive and fancy way. Meanwhile, they also hope that it become more popular and more available to teacher's seminar and workshop. For this purpose, they even urge us to make the HPM study more pertain to teaching in mathematics classroom. Consequently, it is expected that this would eventually lead to a systematic study in the HPM and its incorporation with mathematical teaching.

In her conclusion to this survey, Hui-Yu Su reminds that articles in this Newsletter are supposed to serve examples demonstrating how resources related with HPM can be reached out to wider readership. By getting familiar with the format and discourse in the HPM, readers would eventually be able to share how the HPM can be accessible to teachers who have passion and vision in teaching.

VI. The Future of the Newsletter

Compared with the international counterpart, *History and Pedagogy of Mathematics Newsletter*, published three times a year, the ambition of the Newsletter is as greater as its capacity and diversity in content. Despite it is served basically for a small population of readers

yet to be organized into an association or society, the members of the editorial board takes this chance to have "fun" in doing the HPM. And in this process, they get to know how to improve their expertise both in the history of mathematics and the HPM. As a consequence, they become now more confident in professional development as high school teachers. For example, once they have a chance to join the seminar with historians of mathematics and the experts of the HPM, says Jan van Maanen (the HPM chair of the period 1996-2000) and Marjolein Kool, they feel very comfortable even though their English speaking is not fluent.

Nevertheless, the board members and some intelligent readers deserve wider forum to explore their professional expertise. As to be expected the Newsletter should do more about their profession development. Indeed, we should make the priority to encourage more teachers to join together and share their reflections on teaching, whatever related to the HPM or not. Besides, the message of the Newsletter should also make it clear that a learned society is needed in order for professional historians of mathematics, the HPM experts, mathematics educators as well as school mathematics teachers to join altogether. I hope, in the near future, that we can organize the Taiwanese Society for the History of Mathematics. It is a model copied from the British Society for the History of Mathematics, in which John Fauvel (1947-2001), serving the chair of the HPM in the period 1992-1996, endeavored to imprint his important steps. We the Taiwanese HPM members feel regrettable to his untimely death but are pleased to keep alive his legacy of the HPM and his first and also the last visit of Taiwan in the year of 2000.

Notes:

1. The early version of this article was presented to the Sino-Australian Symposium 2002 (Sydney, Peking, Hsinchu) "Public Understanding of STM and the Roles of Science Studies in the 21st Century Asia, April 1-2, Tsing Hua University, Hsinchu, Taiwan.
2. The only exception is Volume III which contains nine issues. As to the reason why, see Section III of this article.
3. In memory of John Fauvel, I quote here the message from the Third Circular of the Taipei HME which was modified at his suggestion.
4. Participants for the Conference were about 120, including 30 colleagues from eighteen countries and area. See also John Fauvel's "History in mathematics education: challenges for a new millennium, Taipei, Taiwan, 9-14 August 2000", *History and Pedagogy of Mathematics Newsletter* No. 44, November 2000.
5. Most of my graduate students who come back for further study in the history of mathematics / HPM are in-service high school teachers or retain their teaching posts temporarily (usually for two years).
6. It should be noted that answers for Questions 4-8 are not exclusive. In other words, multiple answers can be chosen.

Wann-Sheng Horng
Taiwan

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.

Reports on Conferences

History and Pedagogy of Mathematics in the 7th Maghrebian symposium on the History of Arabic Mathematics

30 May - 2 June 2002
Marrakech, Morocco

COMHISMA7

Le 7è Colloque Maghrébin sur l'Histoire des Mathématiques Arabes s'est déroulé du 30 mai au 1r juin 2002 à l'École Normale Supérieure de Marrakech, Maroc (bulletin précédent). Trente sept conférences ou présentations ont été animées pendant les trois jours qu'a duré le colloque. Ces présentations ont porté sur les nombres, le calcul, l'astronomie, la philosophie, l'optique, les héritages, les devinettes, les arts de la guerre, l'algèbre ou la géométrie dans la civilisation Arabo-Musulmane. D'autres aspects tel que les dictionnaires comme sources historiques, l'influence des mathématiques grecques sur les mathématiques arabes ou l'influence des mathématiques arabes en Europe ont également été débattus.

Dans le colloque, l'HPM a aussi été présente puisque une table ronde et non moins de six participations lui ont été consacrées. On y a alors discuté, entre autres, du rôle de l'histoire des mathématiques dans le changement d'attitudes, dans l'enseignement, dans la formation des enseignants, et dans la recherche en didactique des mathématiques. L'idée de fonder une section maghrébine de l'HPM a d'ailleurs été évoquée.

Le colloque a en fait connu la participation de conférenciers venant d'Europe (19), d'Amérique

(3), du Maghreb (13) et du Moyen Orient (2). Le compte rendue détaillé du colloque apparaîtra dans un prochain numéro du bulletin.

Abdellah El Idrissi
Marrakech, Morocco

A Portuguese secondary teacher at the 7e Colloque Maghrébin sur L'Histoire des Mathématiques Arabes

On May 29, by lunchtime, I arrived to Marrakech. In that moment, I actually believed I was going to participate in the symposium I had been waiting for during many months. It was the seventh time I was at Morocco but I felt the same I've always felt there: it was like being at home. It was the first time I was participating in a maghrebian symposium on the history of mathematics so I had great expectations about it.
Back home, in Lisbon, I have in front of me No. 47 of HPM Newsletter, July 2001. For the last five years I've received the newsletter and I always read it from top to bottom. But this number was the one that brought me the first information about the symposium. Looking at it now the front page brings me again *saudade* (the Portuguese word that has no translation) of John Fauvel.
The historians of mathematics, the secondary teachers, the researchers, had come from 17 different countries in 4 different continents to the École Normale Supérieure de Marrakech. It was 9.30 a.m., May 30, and we were there, at the opening session. During 3 days we attended the parallel sessions, we watched a film, we participated in the HPM Panel and we listened to the plenary conferences.
The present note aims to emphasize three main points concerning the symposium. First of all, the way I was received (from what I saw, everybody would subscribe my opinion) at Marrakech by our colleagues from GREDIM (Groupe de Recherche en Didactique de l'Informatique et des Mathématiques) of ENSMA (École Normale Supérieure de Marrakech). They were very helpful and kind and the symposium was very well organized specially taking into account the conditions they had to overcome. The second point refers to the wonderful and illuminating film about *al muqarnas* that Mrs Dold-Samplonius showed us in a special session where everybody was present. Finally, I would like to present my opinion as a secondary school teacher who has been trying for many years to increase and improve the presence of the history in the teaching and learning of mathematics. Although I'm conscious that the core of the symposium was the History of Arabic Mathematics, I'm pleased about the pedagogical aspects included in the symposium. I live in Lisbon, a town that belonged to the *al-andalous*, and I am very interested in the Arabian culture. I went to Marrakech because I wanted to learn more about the Arabic mathematics and their role in the development of mathematics and, indeed, I fulfilled this aim. But only a didactical perspective could help me taking that knowledge to my mathematics classes. I hope that such perspective will continue to be included in the maghrebian symposiums on the history of Arabian mathematics in Tunisia in 2004.

Isabel Cristina Dias
Lisboa, Portugal

The Abel-Fauvel conference at Kristiansand, Norway

12-15 June 2002

Participants at the Abel-Fauvel conference gather at Kristiansand to enjoy an evening of friendship and mathematics.

Most people arrived in the afternoon/late evening at the Gimlekollen Mediasenter on Tuesday 11 June. There was an excellent spread of food available every day, made all the more palatable by the superb companionship of those present. A total of 27 participants represented 11 countries - Norway, Sweden, Iceland, UK, Germany, Italy, France, USA, Peru, Taiwan and Chile.

Since 1988, when the "Learn from the Masters" conference was organized, Kristiansand has developed considerably as a centre for the study of relations between education and the history of mathematics. In 1994 Agder University College was founded, a masters degree for mathematical education (including history) was introduced and a doctor program in the field is in progress.

I found the conference passed very quickly. We were treated to a total of 31 stimulating sessions from people with a wide variety of mathematical interests, most of them preparing papers for ICME-10. One of those is Kajsa Bråting who is a graduate student in National Swedish Graduate School for Mathematics Education and has been doing some psychological and educational studies. Currently her focus is on the history of mathematics as well as the origin and comprehension of mathematical concepts. She presented a session entitled *Malmsten's Proof of the Integral Theorem - an Early Swedish Paper on Complex Analysis* This was about the Swedish mathematician C.J Malmsten's paper *Om definita integraler mellan imaginära gränsor* from 1865. Malmsten (1818-1886) became professor of mathematics at Uppsala University in 1841. During the 1840s he wrote many remarkable articles and became after Samuel Klingenstierna (1698-1765) the first Swedish mathematician who not only followed the development of mathematics of his time, but also contributed to it. Malmsten was also interested in politics and in 1866 he became county governor of 'Skaraborgs län'

In his article, Malmsten finds some insufficiencies in Cauchy's proof of the integral theorem where the limits of integration are complex numbers. Subsequently, he wants to prove it analogously to Cauchy's proof of the integral theorem for definite integrals between real limits. Thus, Malmsten's approach is to first show the existence of the integral, i.e. the path-independence, and then its various properties.

The aim of her report is to try to catch the techniques that Malmsten made use of in his proof and to get a glimpse of the mathematical concepts at this time, especially those that weren't fully investigated and thereby gave rise to some problems for the mathematicians. The intention is also, to some extent, to become acquainted with the mathematical arena in Sweden at this time.

Of course, with the bicentenary of Abel's birth fast approaching we were treated to many references to his work and a whole session about him. Norway has recently issued two stamps commemorating Abel. They have a monthly competition for school children, details of which can be found at www.kappabel.com. Ivar Salvesen, the project leader, told us all about the work that was being done to promote Abel in Norway (including the song that is proving popular with the all) and provided us with stamps, a mug, a calendar and literature about Abel.

The new Norwegian stamp featuring Abel

There was a conference dinner one evening. The nearby lake and the surrounding countryside made a pleasant setting for the walks that people took before or after the end of the day's sessions. With the sun setting late and rising early there was nearly 20 hours of daylight in which to make the most of Norway.

My thanks go to everyone who attended for the most excellent sessions and friendship, the staff at the Gimlekollen Mediasenter for their help and catering, and the organisers: Director Bengt Johansson of the Swedish National Centre for Mathematical Education at Gotenburg University, Professor Sten Kaijser of the Swedish Research School in Mathematical Education at Uppsala University and Professor Otto Bekken, member of the Nordic Contact Committee for ICME 10 in Copenhagen 2004. Last but not least, thanks to the Norwegian Government for their financial help with accommodation and travel.

Peter Ransom
Romsey, UK

Have you read these?

Articles

Winicki Landman, G.: 2001, 'History in mathematics education – as I read it', *For the learning of mathematics*, v.21, n.3, 22-24.
The HPM newsletter has published a review (n.44, December 2000) of the book Fauvel, J. & Van Maanen, J. (editors): 2000, *History in mathematics education: the ICMI Study*, Kluwer, Dordrecht-Boston-London. The article of Winicki Landman is a review made from the point of view of a researcher and teacher who looks at in order to find an effective and actual help for her work.

Leahy, A.: 2002, 'History of mathematics on the web', *Focus* (The newsletter of the Mathematical Association of America), v.22, n.2, 12.
It is widely recognized that the web is an important tool for those who are interested on history. This note adds further elements to information presented in the site of the British Society for the History of Mathematics (http://www.dcs.warwick.ac.uk/bshm. Resources.html)

Gulikers, I. & Blom, K., " 'A Historical Angle', a Survey of recent Literature on the Use and Value of History in Geometrical Education", *Educational Studies in Mathematics* 47: 223 - 258, 2001.
Many authors have contributed to the debate why we should apply history. The authors of this paper divide the arguments into conceptual, (multi-)cultural and motivational ones. The conceptual arguments again are divided into 'relevant to teachers' and 'relevant to pupils'. Gulikers and Blom found a smaller number of authors who concentrated on the methodological question "How?'. A large bibliography of more than 100 papers is given, and two appendices furnish further details about the content and the purpose of the articles. In particular articles on specific geometrical subjects are described.

Books

Van Amerom, B.A.: 2002, *Reinvention of early algebra. Developmental research on the transition from arithmetic to algebra*, CD-ß Press, Center for Science and Mathematics Education, Utrecht.
This book is the doctoral dissertation of Barbara Van Amerom, an active member of HPM, discussed in Utrecht University (16 May 2002).
Many members of HPM already knew and appreciated the work of van Amerom. She presented it in the HIMED meetings and in European Summer University in History and Pedagogy of Mathematics. Recently she contributed to the panel on realistic mathematics during PME 25 held in Utrecht. In her dissertation she has gathered her studies on early algebra and presents original developments. She pays a particular attention to the role of history in the teaching of algebra.

On 16 May 2002 Barbara van Amerom (shown here outside the Dom in Utrecht) successfully defended her PhD thesis titled *Reinvention of early algebra. Developmental research on the transition from arithmetic to algebra.* She tried to answer questions like: Is it possible to start already at primary school with informal algebraic problem solving? And how can you use the history of mathematics in doing this? The results of the study inspired the committee of examiners to an interesting discussion. Barbara reacted vividly in two languages.
Many friends and colleagues visited this ceremony and congratulated the young doctor afterwards. Barbara did her research under the supervision of the Utrecht Professors Jan de Lange and Koeno Gravemeijer, whereas Dr. Jan van Maanen from the University of Groningen supervised the historical aspects of the study. It is possible to order for a copy of the (English) thesis at the Freudenthal Institute, P.O. Box 9432, NL-3506 GK Utrecht.

Marjolein Kool
The Netherlands

Pizzamiglio, P., *Matematica e Storia. Per una didattica interdisciplinare*, Ed. La Scuola,

Brescia 2002, ISBN 88-350-**9975**-7 (pp. 192, 18,50 E.).
The Author of *Matematica e storia*, Pierluigi Pizzamiglio, is Professor of History of Mathematics and History of Sciences, Catholic University "Sacro Cuore" and Director of "Carlo Viganò" Library of History of Sciences, Brescia, Italy. The first chapter of this important work is devoted to basic educational ideas, the second deals with methodology; in chapter 3 several kinds of historical and educational reports are examined; then many suggestions related with tests and teacher-training are presented. The final *Antologia storiografica* (mainly referred to works in Italian) is complete and very interesting.

Holme, A., *Geometry - Our Cultural Heritage*, Springer Verlag, Berlin, Heidelberg, New York, 2002, pp. 378.
Part I. A cultural Heritage - Early Beginnings - The Great River Civilizations - Greek and Hellenic Geometry - Geometry and the Hellenistic Era - The Geometry of Yesterday and Today - Geometry and the Real World - Part II. Introduction to Geometry - Axiomatic Geometry - Axiomatic Projective Geometry - Models for non-Euclidean Geometry - Making Things Precise - Projective Space - Geometry in the Affine and the Projective Plane - Algebraic Curves of Higher Degrees in the Affine Plane - Higher Geometry in the Projective Plane - Sharpening the Sword of Algebra - Constructions with Straightedge and Compass - Fractal Geometry - Catastrophe Geometry - References - Index.

Fara, P., *Newton: The making of Genius*, Macmillan, 2002, pp.347
A review of this book, written by Lisa Jardine, appeared recently in The Sunday Times. The following quote is taken from that review. "In spite of the title, Fara's book is not concerned with the development of Newton's ground-breaking ideas. A reader could find themselves at the end of her carefully structured account of Newtonian "spin" without being any the wiser about his prism experiments separating white light into its constituent colours, or about his laws of momentum and gravitational attraction. Fara's study of shifting public attitudes to Newton's genius is, nevertheless, a useful corrective for those tediously predictable biographies that appear every few years."

CD ROM

Ancient Mathematics on CD-ROM
One of the main problems in teaching and researching the History of Mathematics consists in the difficulty in gaining access to original works by mathematicians of centuries past. In most cases it is necessary to turn to old editions, which are only available in a few libraries.
To get around these difficulties and to make information about historical mathematics available to a wider public, the Giardino di Archimede has taken the initiative of releasing a series of tests relevant to the history of mathematics on CD-ROM. Each CD contains about 5000 pages (corresponding to about 15-20 volumes). Material can be read directly on our computer and printed. The quality of the images, even when the books are not very well preserved is adequate for a comfortable reading of the more complex texts.
The price of each CD is 130 €. It is also possible a standing order to the first ten CDs at the price of 1040€. For more information and orders, write to archimede@math.unifi.it or visit the web site
http://www.math.unifi.it/archimede.

Fulvia Furinghetti
Genoa, Italy
Marta Menghini and Giorgio T. Bagni
Rome, Italy
Peter Ransom
Romsey, UK

Old books for sale

I have received the following information from Andrei Volgin of Adamant Media.

Our company recently released several reprints of old mathematics books by Kelvin, Todhunter, Salmon, De Morgan, etc. The list can be found on our website at
http://www.elibron.com/english/books/index.phtml
then "Sciences", then "Mathematics & Statistics".

We also encourage requests to reprint other old (pre-1923) books that are not available from other publishers or excessively expensive. I believe that this information may be useful to the readers of your newsletter.

Announcements of events

Third International Conference on Mathematics Education and Cultural History of Mathematics in the Informatics Society

24-27 July 2002
Bukkyo University, Kyoto, Japan

The conference is composed of 6 sessions.
• Keynote plenary lectures
• Researches on mathematics education
• Researches on cultural history of mathematics and history of mathematics
• Researches on the role of informatics
• Celebrating the 80th birthday of Prof. Yokochi
• Forum on recent education in China

WELCOME ADDRESS

On behalf of the organisers of this conference, I wish to express a sincere welcome for coming to MECHM-3 in Kyoto. Following the objectives of preceding MECHMs and their forerunners (the Five Nations Conference on Mathematics Education and the International Conference on Cultural History of Mathematics), MECHM-3 is intended for the international study and improvement of mathematics education, with a particular emphasis on cultural history of mathematics as well as on innovation required in the information age.

Although the scale of the conference is not large, MECHM-3 will offer unique opportunities for the participants to link methodologies and wisdom in mathematics education from the East and from the West. Works in Asian countries will be actively presented there. Also, it is held in Kyoto where Japanese traditional atmosphere is well maintained.

Finally, it is my pleasure to note that the program of MECHM-3 contains a component to celebrate the 80th birthday of Prof. Kiyoshi Yokochi who has been for many years one of the most important pioneers and leaders in the fields on subjects of MECHM-3.

Hiroshi Fujita, Conference Chairman

The official language of the conference is English.

Details of the conference can be seen at the following website:
http://wwwsoc.nii.ac.jp/mes/international/MECHM3.html#3

For more information contact:
Masahiko Suzuki
Department of Mathematics
Osaka Kyoiku University
Asahigaoka, Kashiwara, Osaka
JAPAN 582-8582

The 5th International Symposium On the History of Mathematics and Mathematical Education Using Chinese Characters (ISHME5)

9-12 August 2002
Tianjin Normal University, Tianjin, China

Symposium themes are:
1) Mathematics of using Chinese characters: Transformation from traditional mathematics to

Have you been here?

The British Society for the History of Mathematics web site at
www.dcs.warwick.ac.uk/bshm/
has many links to related sites.

The Italian Society of History of Mathematics web site at
www.dm.unito.it/sism/index.html

The HPM-Americas web site is up and going. The new web site is
www.hpm-americas.org

The HPM satellite meeting in connection with the Copenhagen ICME-10 in 2004 is planned for Uppsala with Sten Kaijser as the local person in charge. You can find out more about ICME-10 and register for the first announcement now at
www.ICME-10.dk

The editor would welcome information about other sites

modern mathematics
2) Studies on the history of mathematics of Korea and Viet Nam
3) Exchange and comparison between mathematics of using Chinese characters and mathematics of India and Arab
4) Mathematical education of using Chinese characters: A comparative approach.

For more information, contact:
Organizing Committee of the 5th ISHME
c/o Xu Zelin
Department of mathematics
Tianjin Normal University
Tianjin, P.R.CHINA, 300074
e-mail: zelinxu@eyou.com
Website: duheng.qzone.com/ISHME

International Colloquium on the History of Mathematics

August 15-18 2002
Xi'an, China

The ICM-2002 (International Conference of Mathematicians) will be held in Beijing on August 20-28 2002. Some 30 satellite conferences on various topics of mathematics will be held outside Beijing. The Northwest University will hold such a conference on the History of Mathematics.

Topics
• Transmission and transformation of mathematics: east and west
• Mathematical thought on the 20th century
• Mathematics in China and neighboring countries and mathematics in Islamic countries
The official language of the conference is English or Chinese.
Contact: Anjing Qu, Jianjun Liu at Centre for the History of Mathematics and Sciences, Northwest University, Xi'an 710069, P. R. China E-mail hs@nwu.edu.cn
Web site http://hismath.go.163.com

Francesco maurolico e le matematiche del rinascimento

October 16-20 2002

L'edizione critica di un' opera scientifica e la sfida delle nuove tecnologie, Messina, promoted by Università di Messina, Università di Pisa, Università di Palermo, Societa' Messinese di Storia Patria, Istituto e Museo di Storia della Scienza, Firenze, Domus Galilaeana, Max-Planck-Institut fur Wissenschaftsgeschichte, Berlin, Kyushu University, Japan,
organization: Veronica Gavagna gavagna@mail.dm.unipi.it), Rosario Moscheo (Rosario.Moscheo@unime.it), Pier Daniele Napolitani (napolita@dm.unipi.it)

20-23 novembre 2002, Leonardo Fibonacci. Matematica e societa' nel Mediterraneo del XIII secolo, Firenze, organizzed by Giardino di Archimede and SISMEL (Societa' Internazionale per lo studio del Medioevo Latino).

HPM Satellite of the XI Inter-American Conference on Mathematics Education

July 10 - 12, 2003
FURB - Blumenau - Brazil

Organisation: Brazilian Society of History of Mathematics - SBHMat

Chair: Sergio Nobre

Information: sbhmat@rc.unesp.br

HPM 2004 satellite conference of ICME-10

July 12 - 17, 2004
Uppsala, Sweden
(First Announcement)

We are happy to inform you that the HPM satellite conference of ICME-10 will take place on July 12 - 17, 2004 in the historic town of Uppsala, Sweden. It will be organized by the department of Mathematics at Uppsala University. The chairman of the local organizing committee is Sten Kaijser who is also the contact person in Uppsala.
A programme committee has been founded consisting of

- Fulvia Furinghetti (chairperson) <furinghe@dima.unige.it>, Dipartimento di Matematica, Università di Genova, Italy
- Sten Kaijser (secretary) <sten@math.uu.se>, Department of Mathematics, University of Uppsala, Sweden
- Abraham Arcavi <abraham.arcavi@weizmann.ac.il>, Weizmann Institute of Science, Israel
- Evelyne Barbin <evelyne.barbin@wanadoo.fr>, IUFM de Créteil, France
- Gail FitzSimons <gail.fitzsimons@education.monash.edu.au>, Faculty of Education, Monash University, Victoria, Australia
- Paulus Gerdes <pgerdes@virconn.com>, Ethnomathematics Research Centre, Maputo, Mozambique

- Wann-Sheng Horng <horng@math.ntnu.edu.tw>, Department of Mathematics, National Taiwan Normal University, Taipei, Taiwan
- Victor Katz <vkatz@udc.edu>, University of the District of Columbia in Washington DC, USA
- Jan van Maanen <maanen@math.rug.nl>, Department of Mathematics, University of Groningen, The Netherlands
- Sergio Nobre <sernobre@ms.rc.unesp.br>, Departamento de Matemática, UNESP, Rio Claro SP, Brazil
- Luis Radford <lradford@nickel.laurentian.ca>, École des sciences de l'éducation, Université Laurentienne, Sudbury, Canada
- Eleanor Robson <eleanor.robson@all-souls.oxford.ac.uk>, Oriental Institute, Oxford, UK
- Gert Schubring <gert.schubring@uni-bielefeld.de>, Institut für Didaktik der Mathematik, Universität Bielefeld, Germany
- Man-Keung Siu <mathsiu@hkucc.hku.hk>, Department of Mathematics, University of Hong Kong
- Costas Tzanakis <tzanakis@edc.uoc.gr>, Department of Education, University of Crete, Greece

About the conference

HPM is the International Study Group on the Relations between History and Pedagogy of Mathematics affiliated to ICMI. HPM publishes a Newsletter three times per year. Since 1992, on the occasion of ICMI 7 in Québec, it has been established the tradition of a satellite meeting of the ICMI conference. The first was held in Toronto (Canada), the second in Braga (Portugal), the third in Taipei (Taiwan). The conference is a unique occasion to attend lectures, workshops, research reports from all over the world about the use of history in mathematics education, history of mathematics, history of mathematics education. The participants to the HPM meetings are researchers in history, in mathematics education, and teachers who have experimented the use of history in their teaching.

Books or proceedings published after the previous HPM satellite meetings:

- Calinger, R. (editor): 1996, *Vita mathematica*, MAA Notes n.40. (HPM 1992)
- Lagarto, M. J., A. Vieira & E. Veloso (editors): 1996, *Proceedings of Second European summer university and satellite meeting of ICME-8* (Braga, Portugal). (HPM 1996)
- Katz (editor): 2000, *Using history to teach mathematics: An international perspective*, Mathematical Association of America. (HPM 1996)
- Horng, W.-S. & F.-L. Lin (editors): 2000, *Proceedings of the HPM 2000 Conference History in mathematics education. Challenges for a new millennium. A satellite meeting of ICME-9*. (HPM 2000)
-

About the venue

The city of Uppsala is one of the oldest cities in Sweden. It was once considered the capital of Sweden and it is still the ecclesiastic capital since the residence of the archbishop of Sweden lies in Uppsala.
Uppsala has a famous university, founded 1477, which is the oldest in Scandinavia. The university has had many famous scholars and scientists of which the founder of botany, Carl von Linne is perhaps the most well known.
Also some of Sweden's most prominent mathematicians during the 20th century, foremost among them Arne Beurling and Lennart Carleson, were educated and for a substantial part of their career active in Uppsala.

For further information contact Sten Kaijser <sten@math.uu.se>. There will soon be a web page under
http://www.math.uu.se/hpm

Fulvia Furinghetti & Sten Kaijser
Italy & Sweden

Distributors:

If you wish to be a distributor in a new or unstaffed area please contact the editor.
From this issue we welcome Ma Li who will look after distribution in China, and Juan E. Nápoles Valdes who will be responsible for distribution in Argentina.

Dr. Ma Li is senior lecturer in mathematics at Linköping University, Sweden. Her interest in the history of mathematics began with Babylonian mathematics, then Chinese mathematics and investigations of parallels between the two ancient cultures. She teaches mathematics and history of maths at undergraduate level and to doctoral students. She also supervises MSc theses in mathematics and its history.

Professor Juan Eduardo Nápoles Valdés is Professor of Financial Mathematical and Research Methodology in the Cuenca del Plata's University (Corrientes, Argentina) and Professor of Numeric Models and Research Methodology in the National Technological University at Resistencia. He is also a member of the Editorial Committee of meetings on Mathematics Education of Cuba and Argentina.

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Items for the Newsletter should be sent to the editor, preferably by email.

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Deadline for material	Sent to distributors
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14 June 2003	1 July 2003

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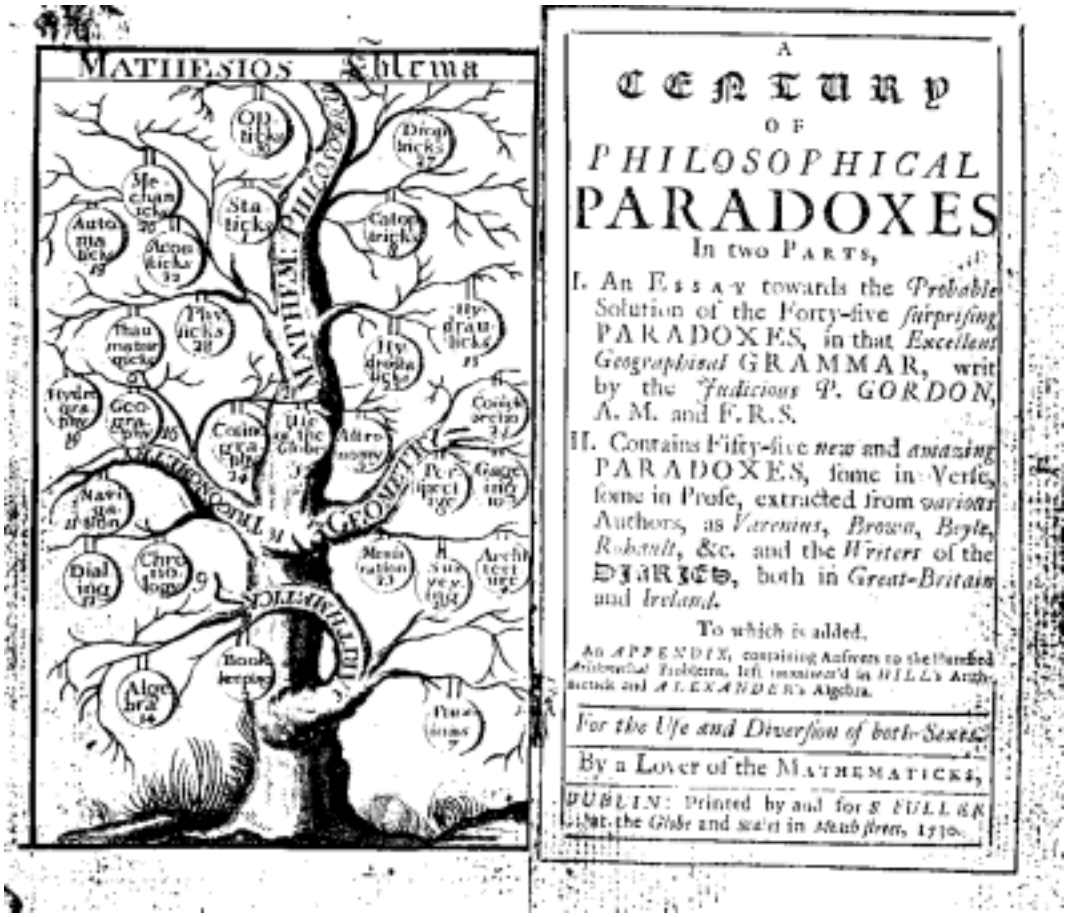
Please pass on news of the existence of this newsletter to any interested parties.

This memorial to John Blagrave, Gentleman of Reading, (1558? - 1611) can be found in the Church of St. Laurence- in-Reading in the UK. It is surrounded by 5 female forms each holding one of the Platonic solids. John Sharp and Peter Ransom wish to know of any other monuments that feature geometrical solids. They are aware of the ones in Salisbury Cathedral, Merton College Chapel, Wimborne St Giles and the History of Science Museum at Oxford. Please contact the editor if you know of any others.



The tree of mathematics