



AFRICAN MATHEMATICAL UNION

COMMISSION ON THE HISTORY OF MATHEMATICS IN AFRICA

AMUCHMA-NEWSLETTER-14

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1. OBJECTIVES

The A.M.U. Commission on the History of Mathematics in Africa (AMUCHMA), formed in 1986, has the following objectives:

- a. to improve communication among those interested in the history of mathematics in Africa;
- b. to promote active cooperation between historians, mathematicians, archaeologists, ethnographers, sociologists, etc., doing research in, or related to, the history of mathematics in Africa;
- c. to promote research in the history of mathematics in Africa, and the publication of its results, in order to contribute to the demystification of the still-dominant Eurocentric bias in the historiography of mathematics;
- d. to cooperate with any and all organizations pursuing similar objectives.

The main activities of AMUCHMA are as follows:

- a. publication of a newsletter;
- b. setting up of a documentation centre;
- c. organization of lectures on the history of mathematics at national, regional, continental and international congresses and conferences.

2. THREE NEW AMUCHMA PROJECTS

- * To stimulate the creation of new national and regional mathematical associations, and to facilitate learning from the experience of existing or past mathematical associations, AMUCHMA proposes to publish a book on the *history of national and regional mathematical associations in Africa*;
- * To stimulate youth in general, and girls in particular, to enter mathematical careers, AMUCHMA proposes to publish two books with *(auto)biographies of African mathematicians*: the first book on those *mathematicians who played a pioneering role in the history of their respective countries*, and the second on *female mathematicians*.

Proposals for contributions, and suggestions for the selection of associations and mathematicians to be included in these books, may be sent to the chairman or to the secretary of AMUCHMA.

3. MEETINGS, EXPOSITIONS, EVENTS

3.1 5th Maghribian Colloquium on the History of Arabic Mathematics

The 5th Maghribian Colloquium on the History of Arabic Mathematics was held in Hammamet (Tunisia) from 1 to 3 December 1994. It was jointly organised by the 'Institut Supérieur de l'Éducation et de la Formation Continue' (ISEFC), which is part of the University of Arts and Human Sciences of Tunis 1) and by the Tunisian Association for Mathematical Sciences (ATSM). The Colloquium was opened by Mehdi Abdeljaouad, Director of ISEFC, in the presence of Bachir Kachoukh, the Chairman of ATSM, and Youcef Atik, Chairman of the Algerian Association for the History of Mathematics. Beside discussing the scientific work of the colloquium, the Maghribian scholars met to discuss the organisation of the 6th colloquium that will take place in 1996. This discussion led to a consensus to try to hold the next colloquium in a city in the Algerian Sahara. It was also decided to contact the Mauritanian authorities in order to study the possibility of holding the colloquium in a Mauritanian town, in the event that not all conditions for its organisation in Algeria are fulfilled.

30 scholars took part in the 5th colloquium, during which the following papers were presented:

- * Bebbouchi, Rachid (Algeria): *The history of the symbols from Antiquity until our days*;
- * Ben Miled, Marouane (Tunisia): *Is there a notion of indecidability in the work of Samaw'al al-Maghribi?*;
- * Berggren, J. Len (Canada): *Abu Sahl al-Kuhi and the division of the sphere*;
- * Borowczyk, Jacques (France): *Approximated algorithms for the approximated construction of regular polygons and conics*;
- * Calvo, Emilia (Spain): *Analysis of six geometrical models to calculate the length of the solar year in Ibn al-Haim's al-Kamil*;
- * Cassinet, Jean (France): *A text from the 13th century of Sharaf al-Husayni as-Samarqandi on the use of the method of analysis and synthesis for the solution of mathematical problems*;
- * Comes, Mercè (Spain): *An unknown equation of Abu l-Hasan al-Marrakushi*;
- * Djebbar, Ahmed (Algeria): *The Euclidian mathematical tradition in the Kitab al-istikmal and its continuation in Andalusia and in the Maghrib*;
- * Dold-Samplonius, Yvonne (Germany): *Al-Kashi's calculations of arches and vaults*;
- * Guergour, Youcef (Algeria): *Comparative study of the second and third species of Kitab al-istikmal of Mu'taman Ibn Hud*;

- * Guillemot, Michel (France): *Is it possible to speak of methods of false position in relation to Egyptian mathematics?*;
- * Folkerts, Menso (Germany) & Lorch, Richard (Great Britain): *The mathematical and astronomical writings of al-Khwarizmi*;
- * Hoyrup, Jens (Denmark): *On the structure of Liber Mensurationum of Abu Bakr*;
- * Koeblen, Sabine (France): *The debate around the definition of proportionality of Book V of Euclid's Elements in the Latin Arabic tradition of the 10th and 11th centuries*;
- * Lamrabet, Driss (Morocco): *The reasons for studying mathematics in the opinion of some Maghribian scholars*;
- * Mawaldi, Mustapha (Syria): *Edition and study of the epistle "Redaction" of Taqiy ad-Din Ibn Ma'ruf" of two proofs, by the Banu Musa, of Heron's formula*;
- * Puig, Roser (Spain): *The Risala fi l-camal bi s-safiha of Ibn al-Banna al-Murakushi*;
- * Rebstock, Ulrich (Germany): *Remarks on the Kitab al-muCamalat of Ibn al-Haytham*;
- * Samso, Julio (Spain): *The tables of planetary equations of the zij of Ibn al-Banna*;
- * Schubring, Gert (Germany): *Actual research trends in the institutional history of the sciences and their application to Islamic culture*;
- * Souissi, Mohamed (Tunisia): *Presentation of an epistle of al-Kindi on the determination of distances with the help of the instrument with two branches*;
- * Taha, Abdel Kaddous (France): *The version of Nasir ad-Din at-Tusi of the Spherica of Menelaos*.

(Report by Ahmed Djebbar)

3.2 Exhibition: Games, Mathematics and Societies

Former AMU Secretary-General and Côte d'Ivoire's current Minister for Higher Education and Scientific Research, Saliou Touré, opened the pedagogical, interactive and intercultural, travelling exhibition on *Games, Mathematics and Societies* in Abidjan, on November 16, 1994. The exhibition was organised by the Mathematical Research Institute of Abidjan (IRMA, Côte d'Ivoire) and the Science Centre of Orléans (France) (cf. AMUCHMA 13: 6.1). Salimata Doumbia (Côte d'Ivoire) and Abdulcarimo Ismael (Mozambique) presented papers on mathematics and traditional games in their respective countries.

3.3 35th International Mathematical Olympiad

The 35th International Mathematical Olympiad was held from July 8-20, 1994, in Hong Kong. Among the 69 participating countries, only two African countries were represented: Morocco and South Africa. They achieved impressive results. Morocco's representatives received two bronze medals and two honorary mentions, and South Africa three bronze medals and one honorary mention.

3.4 4th and 5th Pan-African Mathematical Olympiads

The 4th Pan-African Mathematical Olympiad — organised by the African Mathematical Union — was held from September 6-10, 1993, in Dakar (Senegal). Four countries were able to send delegations: Benin, Burkina Faso, Nigeria and Senegal. The results by country were: 1. Benin, 2. Burkina Faso, 3. Senegal. The individual classification was as follows: 1. Mohamed Toukourou (Benin), 2. William Agassounon (Benin), 3. Kone Frank (Burkina Faso).

The 5th Pan-African Mathematical Olympiad was held from July 18-22, 1994, in Yamoussoukro (Côte d'Ivoire). Three countries were able to take part: Benin, Côte d'Ivoire and Guinea. The results by country were: 1. Côte d'Ivoire, 2. Benin.. The individual classification was as follows: 1. Setonnougbo Hodonou (Benin), 2. (ex aequo) Maxime Akpa (Côte d'Ivoire) and Mohamed Toukourou (Benin).

3.5 Papers on mathematics and astronomy at the Canary Islands

José Barrios Garcia (cf. AMUCHMA 12: 3) presented the paper "On the astronomical knowledge of the Guanches of Tenerife (14th - 15th centuries)" at the *5th Annual European Conference on Archaeoastronomy* (Bochum, Germany, 29-31 August 1994). At the *XI Coloquio de Historia Canario-Americana* (Las Palmas de Gran Canaria, 10-14 October 1994), he read the paper "Cuentas que pasaron ante Juan de Anchieta, escribano público. Un estudio de caso sobre los sistemas de numeración y algoritmos de cálculo utilizados en Tenerife a mediados del siglo XVI", a case study on numerical systems and arithmetical algorithms used in Tenerife in the middle of the 16th century.

4. CURRENT RESEARCH INTERESTS

- * Paulus Gerdes (Mozambique) is preparing a book on "*Women and Geometry in Southern Africa*" with suggestions for further research.

5. NOTES AND QUERIES

This section is reserved for questions that readers would like to have answered; these are the 'queries'. The answers will be the 'notes'. If you have questions or answers about sources, dates, names, titles, facts, or other such matters related to the history of mathematics in Africa, frame them in clear and concise language and send them to the editors. If you are answering a question, make clear reference to that question. All readers may send both questions and answers. Each will be published with the name of the sender.

- * H. Karanda (Tanzania), who taught for 13 years at Nigerian universities, suggests that it would be interesting to do research on the mathematical knowledge of 'unschooled' Yoruba and Hausa business women, in particular in relationship to the discussing of prices with their customers, proposing successive prices that converge in a precise way to a limit value — the de facto intended price.

6. HAVE YOU READ?

6.1 On the History of Mathematics in Africa

- #159 Chabert, Jean-Luc et al.: **Histoire d'Algorithmes du caillou à la puce**, Éditions Belin, Paris (France), 1994, 591 pp.

Collective work of seven authors — among them Ahmed Djebbar (Algeria) — on the history of algorithms, including analyses, comments and (translations of) original texts. The chapters and those sections directly related to the history of mathematics in Africa are the following:

Chapter 1: Algorithms of arithmetical operations [11-58]

- * Egyptian arithmetical algorithms: Rhind Papyrus (1650 BC) [20-25]

- * Optimisation of calculations: *Hawil-lubab* (1437) of Ibn al-Majdi (Egyptian mathematician and astronomer) [34-36]

Chapter 2: Magical squares [59-94]

- * A plotting procedure: Ibn Qunfudh (Maghrib, 14th century), *The unveiling of the operations of calculation* [69-74]

Chapter 3: Around the methods of false position [95-128]

- * Egypt: Problem 26 of the Rhind Papyrus [101-104]
- * M.Souissi: *The Talkhis of Ibn al-Banna* (Maghrib, 13th century) [116-118]

Chapter 4: Around Euclid's algorithm [129-158]

- * Euclid, *The Elements, Book VII* (3rd century BC) [129-134]

Chapter 5: From circle measurement to [159-192]

Chapter 6: Newton's methods [193-226]

Chapter 7: Solution of equations by successive approximations [227-262]

- * Heron of Alexandria, *The Metrica* (1st century) [231-232]
- * Theon of Alexandria, Comments on the Almagest (4th century) [232-234]
- * Medieval binomial algorithms, Ibn al-Banna, *Talkhis* [234-237]

Chapter 8: Algorithms of Number Theory [271-318]

- * The sieve of Eratosthenes: Nicomachus of Gerasa, Introduction to Arithmetics (2nd century) [274-77]
- * Diophantus of Alexandria, The six books of Arithmetis [about 250] [309-311]

Chapter 9: Solution of systems of linear equations [319-354]

Chapter 10: Tables and interpolation [355-392]

- * Ptolemy of Alexandria, *Mathematical composition* (about 150) [358-364]

Chapter 11: Approximate quadratures [393-414]

Chapter 12: Approximate solutions of differential equations [415-448]

Chapter 13: Approximation of functions [449-476]

Chapter 14: Acceleration of convergence [477-536]

Biographical notes [540-576], with information on the following mathematicians who were Africans or worked (sometime) in Africa: Abu Kamil, Archimedes, Diophantus, Eratosthenes, Euclid, Fibonacci, Heron, Hypathia, Ibn al-Banna, Ibn al-Haytham, Ibn al-Majdi, Ibn Qunfudh, Ptolemy, Theon.

- #160 Ganay, Solange de: **Graphies Bambara des nombres**, in: Journal de la Société des Africanistes, Paris (France), 1950, Vol. 20, 295-305
Presents an overview of various graphic signs developed among the Bambara (Mali) to represent numbers.

- #161 Garcia, José Barrios: **Notas sobre los conocimientos matemáticos y astronómicos de los antiguos palmeros según fuentes escritas** [Notes about the mathematical and astronomical knowledge of the ancient inhabitants of Las Palmas according to written sources], in: I Encuentro de geografía, Historia y Arte de la Ciudad de Santa Cruz de La Palma, Santa Cruz de la Palma, 1993, Vol. 1, 112-118
Presents an overview of what written sources from before the 16th century inform about the mathematical and astronomical knowledge in Las Palmas (Canary Islands).

- #162 Gerdes, Paulus: **On Mathematics in the History of Sub-Saharan Africa**, in: *Historia Mathematica*, New York (USA), 1994, Vol.21, 345-376.

Updated version of an overview (presented at the 3rd Pan-African Congress of Mathematicians and published in AMUCHMA 9) of research findings and of sources on or related to mathematics in the history of Africa south of the Sahara. Topics such as counting and numeration systems, mathematical games and puzzles, geometry, graphs, and continental and international connections are included.

- #163 Peynson, Lewis: **Civilizing Mission: Exact Sciences and French Overseas Expansion, 1830-1940**, The John Hopkins University Press, Baltimore and London, 1993, 377 pp.

Section 2.4 "Algeria: The Overseas projection of Metropolitain Terrain" [87-127], section 2.5 "Tunisia and Morocco: The Antebellum Satrapies [128-154], and section 3.7 "Lebanon and Madagascar: Peripheral Territories" [207-240] deal with French colonial policy towards mathematics and the natural sciences in Africa.

- #164 Rashed, Roshdi: **L'analyse et la synthèse selon Ibn al-Haytham**, in: Rashed, R. (ed.), *Mathématiques et Philosophie de l'Antiquité à l'Âge classique*, Éditions du CNRS, Paris (France), 1991, 131-162.

The author analyses certain aspects of the contents of two works of the 11th century mathematician Ibn al-Haytham, entitled 'Maqala fi t-tahlil wa tarkib' (Book on Analysis and Synthesis) and 'Kitab al-ma'lumat' (Book of the Known). The paper is included by an appendix which contains the French translation of the introduction by Ibn al-Haytham to his book Analysis and Synthesis (150-162).

6.2 Publications on the History of Mathematics, Ethnomathematics and Mathematics Education

- #165 Gerdes, Paulus: **Afrikanische Geometrien in Mathematikunterricht** [African Geometries in Mathematics Education], in: Schönbeck, J. et al. (ed.), *Der Wandel im Lehren und Lernen von Mathematik und Naturwissenschaften*, Deutscher Studien Verlag, Weinheim (Germany), 1994, 192-202.

Two examples of southern African geometries are briefly presented: the originally female geometry of the ornamentation of sipatsi handbags in Mozambique's Inhambane Province, and the male geometry of sona sand drawings mostly of eastern Angola and North-Western Zambia. The potential of these geometries for mathematics education is described.

- #166 Gerdes, Paulus: **Recherche ethnomathématique: une réponse e l'un des plus grands défis lancés à l'enseignement des Mathématiques en Afrique** [Ethnomathematical Research: an answer to one of the most important challenges to mathematics education in Africa], Supplement to: Édition Francophone de l'ISGEM Newsletter, Dijon (France), No.5, 1994, 9-12 [cf. below 7.9]
- #167 Touré, Saliou & Dona-Fologo, D. (ed.): **Actes du Séminaire Interdisciplinaire Mathématique-Philosophie et Enseignement** [Proceedings of the Interdisciplinary Seminar Mathematics-Philosophy and Education], Ministère de l'Education Nationale, Abidjan (Côte d'Ivoire), 1994, 118 pp.
- Contains the proceedings of a seminar held at Yamoussoukro, January 25 to 29, 1993. The following sections deal with the history of mathematics or ethnomathematics:
- * Levy, Tony: Euclid's Elements, text and history [10-13]
 - * Doumbia, Salimata: Verbal games and traditional mathematics education in Africa [92-96]
 - * Doumbia, Salimata: Cowrie games [97-101]
 - * Gerdes, Paulus: Ethnomathematics as a new research area in Africa [101-106]

7. ANNOUNCEMENTS

7.1 Pan-African Congress of Mathematicians

The African Mathematical Union (AMU), in collaboration with the 'Société Mathématique du Maroc' and the Al Akhawayn d'Ifrane University, is organising its 4th Congress at Ifrane, Morocco, September 18 to 26, 1995. Papers on all fields of mathematical research and education are wellcomed, including on the *History of Mathematics*. For more information, contact the Chairman of the Local Organising Committee:

A. Kerkour, c/o Secrétariat de la Société Mathématique du Maroc (SMM), BP 1780, Rabat, Morocco

7.2 Nigerian Mathematical Society Annual Conference

The Nigerian Mathematical Society (NMS) is organising its 16th Annual Conference in Ile-Ife, from April 19 to 22, 1995. For more information, contact:

A. Akinola, Department of Mathematics, Obafemi Awolowo University, Ile-Ife, Nigeria

7.3 International and regional CIMPA-schools in Africa

The International Centre for Pure and Applied Mathematics (CIMPA, Nice, France) and UNESCO-Morocco are organising a regional school on Symbolic Computation, to be held in Marrakech (Morocco), in April-May 1995 (2 weeks). CIMPA and UNESCO-Tunisia are organising an international school on Real and Complex Foliations in Sfax (Tunisia), in September 1995 (two weeks). For more information, contact:

CIMPA, 1 av. Edith-Cavell, 06000 Nice, France [Tel: (33) 93 53 18 43; Fax: (33) 93 81 73 48]

7.4 AMESA Ethnomathematics Study Group

As a follow-up to its first national congress (cf. AMUCHMA 13: 2.2), the Association for Mathematics Education in South Africa (AMESA), decided to create a study-group for Ethnomathematics. For more information, contact the coordinator:

M. Mosimege, Department of Education, University of the North, South Africa [Tel: (0152) 268-2687; Fax: (0152) 268-2869]

For those interested in the AMESA Newsletter, contact the editor:

Hugh Glover, AMESA News, University of Port Elizabeth, P.O.Box 1600, Port Elizabeth, 6000 South Africa [Tel: (041) 55-8718; Fax: (01) 56-4519]

7.5 SAMSA International Conference on Mathematics in Teacher Training Colleges

The Southern African Mathematical Sciences Association (SAMSA) is organising a special 5-day conference on "The Mathematics syllabuses of Teacher Training Colleges for potential Mathematics teachers of primary and secondary school children", planned for August-September 1995 in Swaziland. Papers in any other areas of mathematics education are also invited. For more information, contact the chairperson of the Organising Committee:

Mrs F. Mdluli, SAMSA Organising Committee, William Pitcher College, Mathematics Department, P.O.Box 87, Manzini, Swaziland, tel. (268) 52081,

or the chairman of SAMSA:

P.A. Phiri, Mathematics department, University of Swaziland, P/Bag, Kwaluseni, Swaziland, Telex 2087 WD, Fax (268) 85276.

7.6 XXth International Congress of the History of Science

The XXth International Congress of the History of Science will be held from July 25-30 1997 at the University of Liège (Belgium). Its main theme will be: Science, Technology and Industry. For more information, contact:

Congress Office, Centre d'Histoire des Sciences et des Techniques,
Université de Liège, Avenue des Tilleuls 15, B-4000 Liège,
Belgium, Fax: 32 41 / 669547.

7.7 New journal: *Revue d'Histoire des Mathématiques*

Edited under the auspices of the French Mathematical Society, the new international *Revue d'Histoire des Mathématiques* publishes, twice a year, original papers (in French or in English) in History of Mathematics, concentrating on the period from the seventeenth century to the present. For more information, contact the editor:

Christian Gilain, *Revue d'Histoire des Mathématiques*, S.M.F.,
Institut Henri Poincaré, 11 rue Pierre et Marie Curie, F-75231
Paris cedex 05, France

7.8 International Academy of the History of Science

The Secretary of AMUCHMA and Minister of National Education of Algeria (1992-1994), Ahmed Djebbar, has been elected (February 1995) corresponding member of the International Academy of the History of Science.

7.9 Newsletters

Readers of the AMUCHMA-Newsletter may be interested in the following newsletters:

*** Newsletter of the International Commission on the History of Mathematics**

The Newsletter of the International Commission on the History of Mathematics (ICHM) may be obtained by contacting the Secretary:

Jeanne Peiffer, 6 rue des Deux Gares, F-75010 Paris, France

*** Édition Francophone de l'ISGEm Newsletter**

The Newsletter of the International Study Group on Ethnomathematics (ISGEm, cf. AMUCHMA 2: 9.3) is now also available in a French language edition. This edition is produced with support from the Institute for Research in Mathematics Education (IREM) of Dijon and the Inter-

IREM Commission for the Epistemology and History of Mathematics. For more information, contact:

Frédéric Métin, 100 rue du Jarre, 51100 Reims, France

8. ADDRESSES OF SCHOLARS AND INSTITUTIONS MENTIONED IN THIS NEWSLETTER

- * Abdeljaouad, Mahdi: Institut Supérieur de l'Education et de la Formation Continue (ISEFC), 43 rue de la Liberté, 2019 le Bardo, Tunisia (Fax: 568954).
- * Bebbouchi, Rachid: Département de Mathématiques, U.S.T.H.B., Bab Ez-Zouar, Alger, Algeria
- * Benmiled, Marouane: C.N.R.S./RHESEIS, 27 rue Damesme, 75013 Paris, France
- * Berggren, J. Len: Department of Mathematics, Simon Fraser University, Burnaby, British Columbia V5A 1S6, Canada
- * Borowczyk, Jacques: 24 rue Maréchal Tribut, 37000 Tours, France
- * Calvo, Emilia: Facultad Filologia, Universidad Barcelona, Gran Via 585, 08007 Barcelona, Spain
- * Cassinet, Jean: La Fage, 31320 Castanet Tolosan, France
- * Chabert, Jean-Luc: 76, rue Charlot, 75003, Paris, France
- * Comes, Mercè: Dept. Arabe, Facultad Filologia, Universidad Barcelona, Gran Via 585, 08007 Barcelona, Spain
- * Djebbar, Ahmed: Département de Mathématiques, Bâtiment 425, Université de Paris-Sud, 91405 Orsay Cedex, France (Fax: 33-1-47015917)
- * Dold-Samplonius, Yvonne: Turkenlouisweg 14, D-6903 Neckargemund, Germany
- * Doumbia, Salimata: IRMA, Université Nationale du Côte d'Ivoire, 08 BP 2030, Abidjan 08, Côte d'Ivoire
- * García, José Barrios: Dpto. de Análisis Matemático, Universidad de La Laguna, 38271 La Laguna, Tenerife, Canary Islands, Spain
- * Gerdes, Paulus: Instituto Superior Pedagógico, P.O.Box 3276, Maputo, Mozambique (Fax: 258-1-422113)
- * Guergour, Youcef: Département de Mathématiques, E.N.S. de Kouba, 16050 Vieux Kouba, Alger, Algeria
- * Guillemot, Michel: 10 impasse de la Pelude, 31400 Toulouse, France
- * Folkerts, Menso: Institut für Geschichte der Naturwissenschaften der Universität München, Postfach, D-80306 München, Germany
- * Hoyrup, Jens: Institute of Communication Research, Roskilde University, P.O.Box 260, DK-4000, Roskilde, Denmark
- * Ismael, Abdulcarimo: Departamento de Matemática, Instituto Superior Pedagógico, P.O.Box 2923, Maputo, Mozambique
- * Karanda, H.: Mathematics Department, National University of Lesotho, Roma, Lesotho

- * Koeblen, Sabine: 4 rue des Jesuites, 62000 Arras, France
- * Lamrabet, Driss: Département des Sciences de l'Education, Université Mohammed V, Rabat, Morocco
- * Levy, Tony: C.N.R.S./R.H.E.S.E.I.S., 27 rue Damesme, 75013, Paris, France
- * Lorch, Richard: Institut für Geschichte der Naturwissenschaften der Universität München, Postfach 26 01 02, Museumsinsel 1, D-8000 Munich 26, Germany
- * Mawaldi, Mustapha: Institute for the History of Arab Science, University of Alep. Alep, Syria
- * Peynson, Lewis: Département d'Histoire, Faculté des Arts et des Sciences, Université de Montreal, C.P.6128, succursale A, Montreal, Quebec H3C 3J7, Canada
- * Puig, Roser: Dep. Arabe, Facultad Filologia, Universidad Barcelona, Gran Via 585, 08007 Barcelona, Spain
- * Rashed, Rosdi: C.N.R.S./R.H.E.S.E.I.S., 27 rue Damesme, 75013 Paris, France
- * Rebstock, Ulrich: Alber-Ludwig Universität Freiburg, Postfach, D-79085 Freiburg, Germany
- * Samso, Julio: Dep. Arabe, Facultad Filologia, Universidad Barcelona, Gran Via 585, 08007 Barcelona, Spain
- * Schubring, Gert: Institut für Didaktik der Mathematik, Universität Bielefeld, Postfach 100131, D-33501 Bielefeld, Germany
- * Souissi, Mohamed: 7 rue de Teheran, 2000 Le Bardo, Tunisia
- * Taha, Abdel Kaddous: Département de Mathématiques, Université Paul Sabatier, 34000 Toulouse, France
- * Touré, Saliou: c/a IRMA, Université Nationale du Côte d'Ivoire, 08 BP 2030, Abidjan 08, Côte d'Ivoire

9. SUGGESTIONS

What are your suggestions for improving the AMUCHMA Newsletter?

What are your suggestions for other activities of AMUCHMA?

Send your suggestions, comments, information, questions and any other contributions to the chairman or secretary of AMUCHMA.

Send articles, books and manuscripts for the AMUCHMA Documentation Centre to the Chairman or Secretary.

10. DO YOU WANT TO RECEIVE THE NEXT AMUCHMA-NEWSLETTER?

The AMUCHMA Newsletter, published in Arabic, English and French, is available free of charge upon request.

Send requests to the Chairman

Paulus Gerdes
P.O.Box 915, Maputo, Mozambique (Fax: 258-1-422113),

for the **English** version;

or to the Secretary

Ahmed Djebbar
Département de Mathématiques, Bâtiment 425, Université de Paris-Sud,
91405 Orsay Cedex, France (Fax: 33-1-47015917)

for the **French** version;

or to Professor

Mahdi Abdeljaoud,
I.S.E.F.C., 43 rue de la Liberté, 2019 Le Bardo, Tunis, Tunisia,

for the **Arabic** version.

Readers who would like to receive the **AMUCHMA Journal in Portuguese** should contact the editors, P.O.Box 915, Maputo, Mozambique.

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