### AMUCHMA-NEWSLETTER-11

- Chairman: Paulus Gerdes (Mozambique)
- Secretary: Ahmed Djebbar (Algeria)
- Members: Hilda Lea (Botswana), George Njock (Cameroon), Salimata Doumbia (Côte d'Ivoire), Maassouma Kazim (Egypt), John Mutio (Kenya), Mohamed Aballagh (Morocco), Peter Lassa (Nigeria), Abdoulaye Kane (Senegal), Geoffrey Mmari (Tanzania), Mohamed Souissi (Tunisia), Venie Timkumanya (Uganda)

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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 organisations pursuing similar objectives.

The main forms of activity of AMUCHMA are as follows:

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

### 2. MEETINGS

# 2.1 4th Maghribian Symposium on the History of Arabic Mathematics

The 4th Maghrlbian Symposium on the History of Arabic Mathematics was held at the Sidi Mohamed Ben Abdallah University in Fez (Morocco), organized by Mohamed Aballagh, Mohamed Abattouy, and Mohamed Mesbahi. The following papers were presented in Arabic, English, or French dealing with the arabic mathematical sciences, their application and reception during the Middle Ages:

- \* Ahmed Djebbar (Algiers, Algeria): Some aspects of mathematical activities in the extreme Maghreb from the XIIth to the XVIth centuries;
- \* Mohamed Benchrifa (Rabat, Morocco): Presence of mathematics in some Andalusian literary writings;
- \* Moustafa Mawaldi (Aleppo, Syria): Study of the manuscript 'Risala fi-I-Hisab-I-Hawa'i' of Najm ad-Din al-Katibi;
- \* Rachid Bebbouchi (Bab-Ez-Zonar, Algeria): Redaction techniques in mathematics: Arabic heritage and actual reality in Algeria;
- \* Eberhard Knobloch (Berlin, Germany): The knowledge of Arabic mathematics by some important Jesuit mathematicians;
- Michel Guillemot (Toulouse, France): On some algorithms through a manuscript of as-Samaw'al al-Maghribi;
- \* Sonja Brentjes (Leipzig, Germany): The transmission of the Euclid's *Elements* by the Arabes in the Hajjaajianian versions;
- Menso Folkerts (München, Germany) & Richard Lorch (Frankfurt): Arabic sources for the mathematical works of Jordanus Nemorarius;
- \* Sabine Koelblen (Cachan): A combinatoric exercise during the ages and traditions: the rules of six quantities in proportion;
- \* Mohamed Abouttouy (Fez, Morocco): The theory of proportions among Arabic geometers and Galilei;
- \* Hmida Hadfi (Tunis, Tunisia): Abu-I-'Abbas al-Qatrawani through his book Rashf ar-Rudab min thughur A'mal al-Hisab;
- Mohamed Aballagh (Fez, Morocco): Discovery of a new mathematical manuscript of Ibn al-Banna al-Murrakushi al-Qawanin fi-l-'Adad;
- \* Youcef Guergour (Algiers, Algeria): Presentation and analysis of the book *al-Jami' fi-I-Hisab* of Ibn Haydur;
- \* Abdel-Kaddous Taha (Toulouse, France): The Arabic text of Spherics of Menelaus (with a complement on the Arabic text of the so-called lemas of Archimedes);
- \* Yvonne Dold-Samplonius (Héidelberg, Germany): The calculation of the Qubba according to Ghiyath al-Din Al-Kashi;
- \* Elaheh Kheirandish (Cambridge, MA-USA): The medieval Arabic tradition of Euclid's *Optika*;
- \* Abdelmalek Dinia (Rabat, Morocco): Technical analysis of a manuscript of Ibn ar-Razzaz al-Jazari al-Jami'bayna al-'Ilm wa-l-'Amal an Nafi'fi Sina'at al-Hiyal;
- \* Abdelaziz Shahbar (Tetouan, Algeria): The Arabic influence on Hebraic astrononomical studies in Andalusia: The *Zijes* of Ibrahim as-Salamanqui and the works of Ibn Jabirul al-Malaqi as examples;
- \* Khalid Fennan Bouzoubaa (Fez, Morocco): Continuous or infinite? Considerations about Euclidian geometry through the writings of Ibn al-Haytham and of Nasir ad-Din at-Tusi;

- \* Ezzaim Laabid (Marrakech, Morocco): Heritage in Arabic mathematics through the example of Hisab ad-Dawr by al-Khwarizmi;
- \* Mercé Comes (Barcelona, Spain): The trepidation in the astronomical tables of Andalusia and North Africa;
- \* Emilia Calvo (Barcelona, Spain): An unknown work of Ibn Baso: La Risala al-Safiha al-Mujayyaba dhat al-Awtar,
- Néjib Boulahia (Le Bardo, Tunisia): Some Arabic contributions to spherical trigonometry;
- \* Abdellatif Shqouri (Fez, Morocco): Preliminary remarks on *Kitab Minhaj at-Talib fi Tacdil al-Kawakib* of Ibn al-Banna.

### 2.2 XIXth International Congress of History of Science

The XIXth International Congress of History of Science was held at the University of Zaragoza (Spain), August 22-29, 1993. The programme consisted of plenary lectures, symposia, round tables and other scientific sessions. U.D'Ambrosio (Brazil) and P.Gerdes (Mozambique) chaired the Symposium on 'Ethnomathematics, ethnoscience and the recovery of world history of science', where the following papers related to Africa were presented:

- \* Dominique Vellaard (Vancouver, Canada): Numeration systems and colonisation. A case study in Mali (West Africa) and some comparisons with the American Continent;
- Paulus Gerdes (Maputo, Mozambique): On geometry in centralsouthern Africa: the example of the 'sona' tradition;
- \* Abdulcarimo Ismael (Maputo, Mozambique): On the origin of the concepts of odd and even in Makhuwa material culture.

Unfortunately other invited speakers from Africa, namely Abdoulaye Kane (Dakar, Senegal, paper: Universality and cultural contents of numeration procedures) and Salimata Doumbia (Abidjan, Côte d'Ivoire, paper: Mathematics in West-African games) were unable to attend.

At the symposium 'The transmission of scientific ideas, in the field of the exact sciences, between Eastern and Western Islam in the Middle Ages' the following papers related to mathematics and/or astronomy in North Africa were presented:

- Mercè Comes (Barcelona, Spain): Al-Zarqalluh's trepidation models in al-Andalus (Andalusia) and North Africa;
- \* Benno van Dalen (Utrecht, Netherlands): Transmission of astronomical parameter values from east to west;
- \* Emilia Calvo (Barcelona, Spain): The solar model in Ibn al-Ha'im's *al-Zij al-kamil fi-I-ta<sup>c</sup>alim*;
- \* Jacques Sesiano (Lausanne, Switzerland): Algebra from Abu Kamil [Egypt] to the West;

\* Jan Hogendijk (Utrecht, Netherlands): Al-Mu'taman's transformation of the sections in Ibn al-Haytham's *Kitab al-Manazir*.

At the Symposium 'Asian response to the dissemination of European science', Mohamed Souissi (Tunis, Tunisia) presented the paper 'The impact of European science on the Maghrib and in particular on Tunisia, in the second half of the 19th century and the first half of the 20th century'. He presented to more papers at the session dedicated to Ancient and medieval Mathematics:

- \* The trisection of tha angle and the calculation of the side of an eneagon by al-Biruni (972-1048);
- \* The method of double false supposition: its use by the Maghribian mathematical school and by Leonard of Pisa.

Rosdi Rashed (Paris, France) gave the plenary lecture on the 'Development of optics in the Arabic countries'.

### 2.3 Papers presented at recent meetings

- Aderemi Kuku, President of the African Mathematical Union (AMU) delivered the invited address at the joint AMS, CMS, MAA meeting at the University of British Columbia (Vancouver, Canada) on 16.08.1993 [AMS = American Mathematical Society, CMS = Canadian Mathematical Society, MAA = Mathematical Association of Americal. The address was entitled 'Mathematical research and education in Africa: problems and prospects', which included a short history of the African Mathematical Union. The address has been published as a booklet by the AMU.
- \* At the Egyptian Academy of Rome (Italy) Pierangelo Mengoli presented on 14.11.1991 a paper on 'Astronomy in ancient Egypt'.

### **3. CURRENT RESEARCH INTERESTS**

- \* Ron Eglash (University of California, USA) did field work from June to September 1993 in West African countries, continuing his research on fractal geometry in African material culture and knowledge systems. His paper 'The African Geometry of Fractals' will be published in the 'African Studies Review' (cf. AMUCHMA 8:4.1).
- \* José Barrios García (University of La Laguna) is working on the history of ancient mathematics and astronomy in the Canary Islands (North-West Africa).

### 4. 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.

- \* Harald Gropp (University of Heidelberg, Germany) would like to know about research and/or publications about the history of **combinatorics** in Africa
- \* Lamin Mansaray (student from Sierra Leone in Poland) is doing comparative research on the learning of mathematics in Sierra Leone and Poland, testing the ideas of Piaget about learning stages. He would like to know about similar research carried out in other African countries.

### 5. HAVE YOU READ?

#118 Euclid: Les oeuvres d'Euclide [The works of Euclid], Librairie Scientifique et Technique Albert Blanchard, Paris [France], reprint 1993, 627 pp.

Reprint of the translation of Euclid's works by F.Peyard with a new introduction by Jean Itard.

#119 Gerdes, Paulus: Sobre o despertar do pensamento geométrico [On the Awakening of Geometrical Thinking], Federal University of Paraná, Curitiba (Brazil), 1993, 105 pp. (Preface by Ubiratan D'Ambrosio)

Brazilian edition of "Cultura e o despertar do pensamento geométrico" (cf. AMUCHMA #108). Studies the historical relationship between (the development of) geometrical knowledge and socially important activities (mostly) in Africa, such as mat and basket weaving, pot making and house building.

#120 Gerdes, Paulus: Geometria SONA: Reflexões sobre uma tradição de desenho em povos da África ao Sul do Equador [SONA Geometry: Reflections on the Tradition of Drawing among Peoples of Africa South of the Equator], Ethnomathematics Research Project, Higher Pedagogical Institute, Maputo (Mozambique), 1993, Vol.2, 169 pp. Volume 1 was dedicated to the analysis and reconstruction of mathematical elements in the sand drawing tradition of the Tchokwe and neighbouring peoples in Angola, Zaire and Zambia. Volume 2 explores the educational and scientific potential of the (reconstructed) SONA tradition (cf. AMUCHMA-8, # 96, 97, 98 and 109).

#121 Gerdes, Paulus (ed.): A Numeração em Moçambique [Numeration in Mozambique], Ethnomathematics Research Project, Higher Pedagogical Institute, Maputo (Mozambique), 1993, 159 pp.

Analyses the development of numeration systems in Mozambique and includes the following chapters:

- Paulus Gerdes & Marcos Cherinda: African systems of numeration, p.8-28;
- \* Paulus Gerdes: On the history of verbal numeration, p.29-34;
- \* Written sources on numeration and counting in Mozambique [languages: Makonde, Yao, Nyanja, Nyungwe, Makhuwa, Sena, Shona, Tshwa, Chope, Changana, Ronga, swazi, Zulu], p.35-106;
- \* Oral sources on numeration and counting in Mozambique, p.107-120, including: Abdulcarimo Ismael & Daniel Soares: Popular counting methods in Mozambique, p.114-120;
- \* Abílio Mapapá & Evaristo Uaila: Comparative tables and maps about spoken numeration in Mozambique, p.121-132
- \* Jan Draisma: Spoken numeration as a resource in the learning of arithmetic, p.134-150;
- \* Some reflections to stimulate debate and research, p.151-159
- #122 Knorr, Wilbur: Arithmêtike stoicheiôsis: On Diophantus and Hero of Alexandria, in: Historia Matematica, New York, 1993, Vol.20, No.2, 180-192

"Two ancient works, cited in ancient sources as the "Preliminaries to the Arithmetic Elements" and the "Preliminaries to the *Geometric Elements*" - of which the former is no longer extant, while the latter is an alternative designation of the *Definitions*, now commonly attributed to Hero of Alexandria - are here argued to be companion works by the same author, namely Alexandria. Diophantus of This attribution has implications for the dating of Diophantus."

- #123 Lumpkin, Beatrice: Senefer: A young genius in Old Egypt, Africa World Press, Trenton NJ (USA), 1992, 32 pp. New edition of a booklet for children with information on ancient Egyptian number symbols and arithmetical procedures, earlier published by Dusable Museum Press, Chicago, 1979 (cf. AMUCHMA #10).
- #124 Mubumbila, Mfika: Sciences et traditions africaines: les messages du Grand Zimbabwe [Sciences and African traditions: the messages from Great Zimbabwe], L'Harmattan, Paris (France), 1992, 108 pp.

The author intends to reveal "some scientific knowledge of the precolonial Bantu world" (p.91), in particular of numeration and geometric figures in the Great Zimbabwe civilization..

- #125 Mubumbila, Mfika & Bum, Silas: De la pyramide a la case, le secret du bâtiment africain, Association Culturelle et Philosophique Bantu, Strasbourg (France), 1992, 34 pp. Brochure on African architecture giving particular attention to shape and geometric form.
- #126 Ptolemeus: Composition mathématique [Mathematical composition], Librairie Scientifique et Technique Albert Blanchard, Paris [France], reprint 1988, 2 volumes, 1090 pp. Reprint of the translation of Ptolemeus of Alexandria's Mathematical Composition by abby Halma published in 1813 and 1816 with notes by Delambre.
- #127 Vellard, Dominique: Anthropologie et sciences cognitives: une étude des procédures de calcul mental utilisées par une population analphabète, in: Intellectica, 1988, Vol.2, No.6, 169-209 Analyses the cognitive processes used by the Bambara population of Mali when solving problems of mental calculation.

### 6. ANNOUNCEMENTS

### 6.1 To be published

# \* Encyclopedia of the History of Science, Technology and Medicine in Non-Western Cultures

Helaine Selin (Hampshire College, Amherst, USA) is preparing the edition of a "Encyclopedia of the History of Science, Technology and

Medicine in Non-Western Cultures", to be published in 1995 by Garland Publishing Inc.

### \* Encyclopedia of Sub-Saharan Africa

John Middleton (Yale University, USA) is preparing the edition of "The Encyclopedia of Sub-Saharan Africa", to be published by Simon Schuster Academic Reference Division.

### \* Busard Festschrift

M.Folkerts and J.Hogendijk have edited 'VESTIGIA MATHEMATICA: Studies in medieval and early modern Mathematics in honour of H.Busard', to be published by Editions Rodopi. The following chapters, written by African historians and/or related to the history of Mathematics in Africa, will be included:

- \* A.Djebbar: Two little known mathematicians from Spain in the 11th century: al-Mu'taman and Ibn Sayyid;
- \* J.Hogendijk: The Arabic version of Euclid's 'On Division';
- \* R.Lorch: Abu Kamil on the pentagon and decagon;
- \* B.Rosenfeld: "Geometric trigonometry" in treatises of al-Khwarizmi, al-Mahani and Ibn al-Haytham;
- \* J.Sesiano: The medieval Latin version of the "Algebra" of Abu Kamil.

### \* Theon of Alexandria

The Librairie Scientifique et Technique Albert Blanchard (Paris, France) will publish, in 1993, a reprint of Theon of Alexandria's comments on the 'Syntax' of Ptolemeus (Greek text with French translation by Halma).

### \* Ancient Egyptian Mathematics

The Leopard d'Or (Paris, France) will publish in 1993 Sylvia Couchoud's book 'Les Mathématiques Egyptiennes' (224 pp.).[cf. AMUCHMA3:6, #35].

### 6.2 5th Maghribian Symposium on the History of Arabic Mathematics

The 5th Maghribian Symposium on the History of Arabic Mathematics will be held in Tunis (Tunisia) in December 1994.

### 6.3 African Resource Centre for Indigenous Knowledge

The African Resource Centre for Indigenous Knowledge (ARCIK), created in 1991, is engaged in searching for, retrieving, storing and disseminating information on Indigenous Knowledge (IK) systems in the social, economic, political, cultural and technological life of African societies. The centre also gives bibliographic support to people conducting research on Indigenous Knowledge. For more information:

Tunji Titilola, Research Coordinator ARCIK, PMB 5, UI Post Office, Ibadan, Nigeria (Fax: 234-22-416129 or 234-1-614397)

In Kenya and Ghana, Iocal resource centres for Indigenous Knowledge were created in 1992: the **Kenya Resource Centre** for Indigenous Knowledge (KENRIK) and the Ghana Resource Centre for Indigenous Knowledge (GHARCIK). For more information:

Mohamed Isahakia, KENRIK, c/o The National Museum of Kenya, P.O.Box 40658, Nairobi, Kenya (Fax: 254-2-741424);

Mensah Bonsu, GHARCIK, c/o School of Agriculture, University of Cape Coast, Ghana.

The Centre for International Research and Advisory Networks (CIRAN) publishes the **Indigenous Knowledge and Development Monitor** for those who are interested in indigenous knowledge. Subscriptions to the Monitor are free for the year 1993:

CIRAN, P.O.Box 90734, 2509 LS The Hague, The Netherlands (Fax: 31-70-3510513).

### 6.4 International Commission on the History of Mathematics

Eberhard **Knobloch** (Berlin, Germany) has been elected Chairman of the International Commission on the History of Mathematics for the period 1993-1997. Ahmed Djebbar (Secretary AMUCHMA, Algiers, Algeria), Andrew Dale (Durban, South Africa), Mohamed Souissi (member of AMUCHMA, Tunis, Tunisia), and Paulus Gerdes (Chairman AMUCHMA, Maputo, Mozambique) represent the African continent in the International Commission. Among other activities the ICHM publishes the journal **Historia Mathematica**, of which David Rowe is the editor.

### 6.5 Mathematical Conferences in Africa

\* The International Conference on Statistics and the Quality of Life: A Third World Perspective will be held in Luxor (Egypt) from 9 to 12 January 1994. For more information contact: P.Sen, Department of Biostatistics, University of North Carolina, Chapel Hill, NC 27599, USA.

#### 7. ADDRESSES OF SCHOLARS AND INSTITUTIONS MENTIONED IN THIS NEWSLETTER

- \* Aballagh, Mohamed: Département de Philosophie, Faculté de Lettres, Université de Fez, Fez, Morocco
- \* Africa World Press: 15 Industry Ct., Trenton, NJ 08638, USA (Fax: 609-771-1666)
- \* ARCIK: PMB 5, UI Post Office, Ibadan, Nigeria (Fax: 234-22-416129 or 234-1-614397)
- \* Association Culturelle et Philosophique Bantu (ACPBA): BP 222, 67006 Strasbourg Cedex, France (Tel. 88794342)
- \* Brentjes, Sonja: Karl-Sudhoff-Institut, Universität Leipzig, Augustusplatz 9/10, D-7010 Leipzig, Germany
- \* Calvo, Emilia: Dept.Semiticas, Fac.Filologia, Universidad de Barcelona, Gran Via 585, 08007 Barcelona, Spain
- \* CIRAN: P.O.Box 90734, 2509 LS The Hague, The Netherlands (Fax: 31-70-3510513)
- \* Comes, Mercè: Dept.Arabe, Universidad Barcelona, Gran Via 585, 08007 Barcelona, Spain
- \* Dalen, Benno van: Mathematical Institute, University of Utrecht, P.O.Box 80010, 3508 TA Utrecht, Netherlands
- D'Ambrosio, Ubiratan: Rua Peixote Gomide 1772 Ap.83, CEP 01409 São Paulo SP, Brazil
- \* Djebbar, Ahmed: Ministry of National Education, Algiers, Algeria (Fax: 213-2-393658)
- Doumbia, Salimata: Institut de Recherches Mathématiques, 08 B.P.2030, Abidjan 08, Côte d'Ivoire
- \* Editions Rodopi: Keizersgracht 302-304, 1016 EX Amsterdam, The Netherlands [Fax: (020) 638-0948]
- \* Eglash, Ron: History of Consciousness, University of California, Santa Cruz, Ca 95064, USA
- Folkerts, Menso: Institut für Geschichte der Naturwissenschaften, Museumsingel Postfach, D-8000 München 26, Germany
- \* García, José Barrios: Dpto. de Análisis Matemático, Universidad de La Laguna, 38271 La Laguna, Tenerife, Canary Islands, Spain

- \* Gerdes, Paulus: Higher Pedagogical Institute, P.O.Box 3276, Maputo, Mozambique (Fax: 258-1-422113)
- \* GHARCIK: c/o School of Agriculture, University of Cape Coast, Ghana
- \* Gropp, Harald: Mühlingstr.19, D-69121 Heidelberg, Germany
- \* Guergour, Youcef: Cité 198 Hogement BT 26 A 24, 16111 Bab Ezzonar, Algiers, Algeria
- \* Hogendijk, Jan: Mathematical Institute, University of Utrecht, P.O.Box 80010, 3508 TA Utrecht, Netherlands
- \* Kane, Abdoulaye: Dept. de Philosophie, Université Cheikh Anta Diop, Dakar-Fann, Senegal
- KENRIK: c/o The National Museum of Kenya, P.O.Box 40658, Nairobi, Kenya (Fax: 254-2-741424)
- Knobloch, Eberhard: Technische Universität Berlin, Fachbereich 1 und 3, Wissenschaftgeschichte-Mathematik, Ernst-Reuter-Platz 7, D-1000 Berlin 10, Germany
- Knorr, Wilbur: Program in History of Science, Stanford University, Stanford, California 94305-2024, USA
- \* Kuku, Aderemi: President African Mathematical Union, c/o Department of Mathematics, University of Ibadan, Ibadan, Nigeria
- \* Librairie Scientifique et Technique Albert Blanchard: 9, rue de Médicis, F 75006 Paris, France [Fax: (1) 43299731]
- \* Lumpkin, Beatrice: 7123 S.Crandon, Chicago, IL 60649, USA
- \* Mansaray, Lamin: ul.Zioty Ròg 32/51, 30-095 Kraków, Poland
- \* Mfika, Mubumbila: 17 rue de Loraine, 67100 Strasbourg, France
- \* Rashed, Rosdi: Centre d'Histoire de Sciences, 27 rue Damesme, 75013 Paris, France
- \* Rowe, David: Historia Mathematica, Fachbereich 7 Mathematik, Universität Mainz, Staudingerweg 9, 6500 Mainz 1, Germany
- \* Selin, Helaine: Science Librarian, Hampshire College, Amherst, Ma 01002, USA (Fax: 413-549-0707)
- \* Sesiano, Jacques: DMA-EOFL, CH 1015 Lausane, Switserland
- Souissi, Mohamed: Faculté des Lettres et Sciences Sociales, Université de Tunis, 7 rue de teheran, 2000 Le Bardo Tunis, Tunisia
- \* Vellard, Dominique: c/o J.Langlois, P.O.Box 3159, Main Post office, Vancouver BC, V6B 3X6 Canada

### 8. 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.

#### 9. 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 Ministry of National Education, Algiers, Algeria

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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- # Rashed, Roshdi: Entre aritmétique et algèbre. Recherches sur l'histoire des mathématiques arabes [Between Arithmetic and Algebra: Research on the History of arabic Mathematics], ...,.., 1984, pp.
- # Rashed, Roshdi (ed.): Optique et mathématique: Recherches sur l'histoire de la pensée scientifique en arabe [Optics and Mathematics: Research on the History of scientific thinking in Arabic], Variorum, Ashgate (UK), 1992, 340 pp.
- # Rashed, Roshdi: Géométrie et dioptrique au Xe siécle: Ibn Sahl, Al-Quhi et Ibn Al-Haytham [Geometry and dioptrics], Les Belles Lettres, Paris (France), 1993, 315 pp.
- # Ibn al-Haytham: On the Configuration of the World (Translated with critical commentary by Y.T.Langermann), ...., ...., 1991, 392 pp.
- # Ibn al-Haytham: The Optics, Books I-III, On Direct Vision (Translated with Introduction and Commentary by A.I.Sabra), ...., 1989, 2 vols., 613 pp.
- # Clagett, M.: Ancient Egyptian Knowledge. A source book, ...., 1989, 2 vols., 863 pp.
- # Diophante: Les arithmétiques, 3: Livre IV (Translation by R.Rashed),...,.., 1984, 261 pp.
- # Diophante: Les arithmétiques, 4: Livres V-VI (Translation by R.Rashed),...,.., 1984, 319 pp.
- # Diophanti Alexandrini: Opera omnia cum graecis commentariis (reprint of the 1895 edition by P.Tannery),...,..,298 pp.
- # Pappus of Alexandria: **Book 7 of the Collection** (Translation and Commentary by A.Jones),...,.., 1986, 747 pp.
- # Sesiano, Jacques: Books IV to VII of Diophantus Arithmetica in the Arabic Translation attributed to Qusta Ibn Luqa, ..., 1982, 502 pp.