AMUCHMA-NEWSLETTER-12

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Higher Pedagogical Institute (ISP), Maputo (Mozambique), 27.3.1994

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 forms of activity 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. MEETINGS

2.1 Papers presented at recent meetings

* At the Southern African Mathematical Sciences Association Special Conference "The mathematics education of children in Southern Africa" held at Instituto Superior Pedagógico's branch in Beira (15-19 September 1993), the following papers related to the history of mathematics and ethnomathematics were presented:
    * Alan Bishop (Melbourne, Australia): *Is mathematics culture free?*;
    * Marcos Cherinda (Maputo, Mozambique): *"Circle of interest" in ethnomathematics*;
    * Abdulcarimo Ismael (Maputo, Mozambique): *On the origin of the concepts of even and odd in Makhuwa material culture*;

    * Abílio Mapapá, Marcos Cherinda, Abdulcarimo Ismael: *Numeration systems in Mozambique*;
    * David Mtwetwa (Harare, Zimbabwe): *School and "ethno" mathematics: bringing the mathematics embedded in everday cultural and other activities found in traditional Zimbabwean communities into the children's classrooms - a study in progress*;
    * Daniel Soares (Beira, Mozambique): *Approximating the circular form in an old basket weaving technique*;
    * Beniel Seka (Dar es Salaam, Tanzania): *Teaching mathematical concepts through games and stories*;
    * Evaristo Uaila (Beira, Mozambique): *Mathematics used in the fabrication of baskets of the nkhwama type*.

* At the 9th Symposium of the Southern African Mathematical Sciences Association (December 13-17, Gaborone, Botswana), Abdulcarimo Ismael presented a paper on *"Recent ethnomathematical research in Mozambique"* and Paulus Gerdes on *"Mathematics in the cultural environment of Southern Africa: two examples from geometry"*.

3. CURRENT RESEARCH INTERESTS

* Ancient mathematics and astronomy in the Canary Islands

José Barrios García wrote us the following about his research on ancient mathematics and astronomy in the Canary Islands:

"As present day archaeology assumes, the Canary Islands were primarily inhabited by Berber populations coming from the nearby continent about the first half of the first millennium BC. These populations remained relatively isolated until the European *discovery* of the islands in the late 13th century. After two centuries of struggles, all islands were finally incorporated to the Spanish crown in the late 15th century.
In 1984 I began research on the mathematical and astronomical knowledge of these people prior to the conquest, mainly based on archaeological remains and written ethnographic sources (ranging from the 14th century on). However, since then the scope of my research has been broadened to include religious, economic and social aspects, strongly joined to mathematical and astronomical practices since, for example, the religion turns out to be mainly an astral one. These three issues: mathematics, astronomy and (astral) religion are the main topics of the doctoral dissertation I am now writing in the Department of Anthropology of this university [Universidad de La Laguna].

With respect to mathematical aspects, I have mainly studied the two known number lists from Gran Canaria Island (one of them from the year 1341 and the other one from a difficult-to-date manuscript earlier than the 18th century), and now I am preparing the edition of a new list I have found in a manuscript from the late 16th century. Two of these lists present 10-based systems, which seem to be characteristic of pre-Islamic North African numeral systems from Egypt to the Canary Islands, the third one being too short to be conclusive in this respect, although it points in the same direction.
I have also studied, with some success, the written sources, in order to find other evidence of mathematical activities. Among my findings it is worthwhile to mention the very probable existence of a census of inhabitants prior to the conquest, at least in three of the islands. Other aspects I am now beginning to study deal with symbolical aspects of numbers and geometry, as well as symmetry groups in the decoration of ceramics.
With respect to astronomy, I am investigating the ancient calendars and astronomical practices of ancient inhabitants of the islands, specially in Gran Canaria Island. Connected with this, I presented this summer at the IVth Oxford International Conference on Archaeoastronomy (Stara Zagora, Bulgaria, 23-29 August 1993), a paper entitled *"A Berber solstitial marker earlier than the 16th century on Gran Canaria Island"*, showing what I think to be a solstitial marker at the top of the most important religious mountain of the island. Other research in this field deals with the astral religion of this people and their concept of soul, including the ancient Canarians considering themselves as *sons of the sun*".

José Barrios García sent us the following documents for the Archives of AMUCHMA:

* R.Pietschmann: Über die Kanarischen Zahlworte [On the Canarian number words], *Zeitschrift für Ethnologie*, Berlin, 1879, vol. XI, 377-391;
* B.Bonnet: La expedición portuguesa a las Canarias en 1341 [The Portuguese expedition the Canarian Islands in 1341], *Revista de Historia*, La Laguna, 1941, Vol. 62, 112-133;
* W.Giese: Review of "J.Delgado - Sistema de numeración norteafricano (Madrid, 1949), *Revista de Historia*, La laguna, 1950, Vol. 89, 89-94;
* D.Wölfel: Les noms de nombre dans le parler Guanche des Isles Canaries, *Hespéris*, Paris, 1954, Vol.41, 47-79;
* M.Barreto: Die Zahlwörter der Altkanarier [The number words of the ancient Canarians], *Almogaren*, Halein, 1971, Vol.II, 151-167;
* J.García: *La lista de numerales canarios atribuida a Antonio Cedeño: estudio de variantes (Cedeño, Marín de Cubas, Fr.José de Sosa y Abreu Galindo)*, paper presented at the Xth Colloquium

on Canarian-American History, Las Palmas, Gran Canaria, 30 November - 5 december 1992, 14 pp.;

* J.García: *Notas sobre los conocimientos matemáticos y astronómicos de los Benahoaritas, según las fuentes escritas anteriores al siglo XVII* [Remarks about the mathematical and astronomical knowledge of the Benahoaritas according to written sources before de 17th century], paper presented at the 1st La Palma Congress on History, Art and Geography, La Palma, 15-19 March 1993, 6pp.;
* J.García: *Matemáticas tribales y cultura. El caso de las canarias Bereberes durante los siglos XIV y XV* [Tribal mathematics and culture. The case of the canarian Berbers during the 14th and 15th centuries], paper presented at the VIth Anthropology Congress of the Federation of Spanish Anthropology Associations, La Laguna, 6-11 September 1993, 9 pp.

* Geometrical algorithms in Ancient Egypt

Paulus Gerdes is concluding a study on geometrical algorithms used in Ancient Egypt, especially on the construction of continuous line patterns on scarabs, wall paintings and vases. These algorithms display some interesting similarities with those of the sona sand drawing tradition in central-southern Africa (cf. e.g. AMUCHMA 10: 6, #109).

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.

5. BIOGRAPHICAL SKETCHES OF FAMOUS AFRICAN MATHEMATICIANS

Recent publications of the American Association for the Advancement of Science (AAAS) Sub-Saharan Africa Program included presentations from well-known African mathematicians. The bibliographical sketches that accompanied their presentations are reproduced below.

* **Aderemi Oluyomi Kuku**

"Professor Kuku, President of the African Mathematical Union, holds a Ph.D. from the University of Ibadan in Nigeria, where he also served as Lecturer and Professor of Mathematics from 1968, including serving as Head of the Department of Mathematics from 1983-1986, and as Dean of the Postgraduate School from 1986-1990. In 1987-88 he also served as Chairman of the Committee of Deans of Postgraduate Schools in Nigerian Universities. Professor Kuku has held visiting positions at several universities in the United States, Canada, and Germany" (*Science in Africa: Career Strategies for Graduate Studies*, AAAS, Washington, 1993, p.41). A.O.Kuku presented the paper *"Capacity-building and human resources for accelerated development of science and technology in Africa"* (19-22).

* **Juma Shabani**

"Professor Shabani, born in Burundi, received his M.Sc. in Mathematics from the State University of Kharkov in the then-Soviet Union, and holds an M.Sc. in Physics and a Ph.D. in Mathematical Physics from the Université Catholique de Louvain in Belgium. He speaks five languages (Swahili, Kirundi, French, English, and Russian), is a member of more than 10 scientific societies, and has been widely published in specialized journals in the United States and Europe. Professor Shabani was Vice-Rector of the University of Burundi until 1992, and was recently named the new Deputy Secretary-General of the Association of African Universities. He also currently holds the position of Visiting Professor at the National University of Benin and the University of Burundi" (*Science in Africa: Career Strategies for Graduate Studies*, AAAS, Washington, 1993, p.42). J.Shabani presented the paper *"Strategies for capacity-building through regional cooperation in science and technology and postgraduate education in Africa"* (1-7).

* **Grace Alele Williams**

"Professor Williams received her education at Queens College in Lagos, University College at Ibadan, and the University of Vermont, before receiving a Ph.D. from the University of Chicago in 1963. She made history as the first Nigerian woman to be awarded a doctorate. She returned to Nigeria for a couple of years' postdoctoral work at the University of Ibadan before joining the faculty of the University of Lagos in 1965.
Her ongoing interest in mathematics education was originally sparked by her stay in the US, which coincided with the Sputnik phenomenon. Working with the African Mathematics Program in

Newton, Massachusetts, under the leadership of MIT professor Ted Martins, she participated in mathematics workshops held in various African cities from 1963 to 1975. Highlights included writing texts and correspondence courses covering basic concepts in mathematics, working in concert with leading mathematicians and educators. She taught at the University of Lagos from 1965 to 1985, and spent a decade directing the Institute of Education, which introduced innovative non degree programmes, with many of the certificate recipients older women working as elementary school teachers.

Appointed the first female Vice Chancellor of a Nigerian university in 1985, Professor Williams believes her appointment at the University of Benin, which ended in 1992, was a test case to demonstrate a women's executive capability. She is now Professor of Mathematics Education at the University of Lagos. Among her honors are those of Fellow of the Mathematical Association of Nigeria and of the Nigerian Academy of Education; Merit Award Winner of Bendel State in Nigeria; and Regional Vice President for Africa of the Third World Organization for Women in Science" (*Science in Africa: Women Leading from Strength* AAAS, Washington, 1993, p.174). It may be added that Professor Williams is also the Chairwoman of the African Mathematical Union Commission for Women in Mathematics.

In her presentation *"Mathematics and Administration: a curious mix for education leadership"* (19-26) G.A. Williams summarizes her professional experience and her ideas about how to increase the participation of women in mathematics, science and decision-making.

Among Williams' papers related to the African Mathematics Program are the following:

* *The Entebbe Mathematics Project*, in: International Review of education, UNESCO, Hamburg, Vol. 17, No. 2, 1971, 210-214
* *Dynamics of curriculum change in mathematics: Lagos State Mathematics Project*, in: West African Journal of Education, Vol. 18, No. 2, 1974, 241-253
* *The development of a modern mathematics curriculum in Africa*, in: Arithmetic Teacher, No. 4, 1976, 254-261

6. HAVE YOU READ?

#128 Alberich, Julio Cola: **Números simbólicos y rituales en el Africa subsahariana** [Symbolic numbers and rituals in sub-Saharan Africa], in: Homenagem a J.R. dos Santos Júnior, Instituto de Investigação Científica Tropical, Lisbon, 1990, 99-104

Describes the symbolical significance or use of the numbers two, three, four, five, six and seven in various African cultures.

#129 Barreto, Manuel Cabrera: **Die Zahlwörter der Altkanarier** [The number words of the ancient Canarians], in: Almogaren, Hallein, 1971, vol. II, 151-167

"The author examines critically the information available regarding the numerals in the language of the natives of the Canary Islands. Their basis of counting is the decimal system, which is clearly proven by all recent critical and historical studies. Ancient Canarian and Berber numerals are closely akin as regards language and counting, which shows the North African origin of the ancient Canary islanders also in this domain. Apparently Semitic traits can be explained by the presence of Negro and Berber slaves in the Canary Islands, as stated by dr. Bosch Millares, an assumption which is better established than that of a linguistic hybridization of the Canarian natives" (p.167).

#130 Gerdes, Paulus: **L'ethnomathématique comme nouveau domaine de recherche en Afrique: quelques réflexions et experiences du Mozambique**, Ethno-mathematics Research Project, Instituto Superior Pedagógico, Maputo (Mozambique), 1993, 84 pp.

Analyses ethnomathematics as a new a new research field in Africa and presents some reflections based on experiences in Mozambique.

#131 Gerdes, Paulus & Marcos Cherinda: **Words, gestures and symbols**, in: *The UNESCO Courier*, Paris, November 1993, 37-39

Abridged version of a paper on numeration systems in Africa (cf. AMUCHMA 10: 7.5).

#132 Gerdes, Paulus & Gildo Bulafo: ***Sipatsi*: Technology, Art and Geometry in Inhambane** [English translation: P.Gerdes & A.Powell], Ethnomathematics Research Project, Instituto Superior Pedagógico, Maputo (Mozambique), 1994, 102 pp.

Analyses the technological and geometrical knowledge of basket weavers in Mozambique's Inhambane province. Presents a catalogue of decorative strip patterns on woven handbags (*sipatsi*) and some suggestions are made for an educational and mathematical exploration of *sipatsi*.

#133 Grattan-Guinness, I. (ed.): **Companion Encyclopedia of the History and Philosophy of the Mathematical Sciences**, Routledge, London, 1994, 1721 pp.

Two chapters deal directly with mathematics in Africa:

* C.S.Roero: Egyptian mathematics, 30-45;
* C.Zaslavsky: Mathematics in Africa: explicit and implicit, 85-92.

#134 Thomas-Emeagwali, Gloria (ed.): **African systems of science, technology and art: the Nigerian experience**, Karnak House, London, 1993, 143 pp.

Includes chapters on methodological issues, textile technologies, traditional medicine, food processing, metal technology, mechanics and engineering.

#135 Wilson, Bryan: **The African Education Program (Mathematics, Science) of the American Education Development Center**, in: Cultural contexts of Science and Mathematics Education. A bibliographic guide, Centre for Studies in Science Education, University of Leeds, 1981, 195-199

Presents a short historical overview of the African Mathematics Program.

7. ANNOUNCEMENTS

7.1 International History and Pedagogy Conference

The *International Study group for the Relations between History and Pedagogy of Mathematics* (HPM, cf. AMUCHMA 2: 9.2) organizes the International HPM Blumenau Conference to take place in Blumenau (Brazil) from 25 to 27 July, 1994. Conference languages are English, French, Spanish and Portuguese. For more information, contact:

Ubiratan D'Ambrosio, Rua Peixoto Gomide 1772 Ap.83, CEP 01409 São Paulo, Brazil (Fax: 55-11-280-0266)

7.2 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) from 1 to 3 December 1994. The Symposium themes are:

1. Mathematics: Algebra, Geometry, Arithmetic, Number theory, Combinatorics, Trigonometry;
2. Astronomy: Planetary models, Astronomic tables;

3. Applied mathematics: Science of inheritance, Architecture, Optics, Mechanics, Astrology, Music;
4. Mathematics and society: Mathematical manuals, Educational infrastructures, Mathematics and cultural and ideological environment, Mathematics and philosophy, Pre-Islamic mathematical heritage, Transmission of Arabic mathematics to Europe, Mathematics and the classification of sciences.

The Symposium languages are Arabic, English and French. For more information, write to:

Mahdi Abdeljaouad, Institut Supérieur de l'Education et de la Formation Continue (ISEFC), 43 rue de la Liberté, 2019 le Bardo, Tunisia (Fax: 568954).

7.3 Conferences in Africa

* CASTME Conference in Botswana

The Commonwealth Association of Science, Technology and Mathematics Educators (CASTME) organizes regional meetings every three years. The next is to take place at the University of Botswana, 27th June - 1st July 1994. The theme of the conference is "Scientific and Technological Literacy for Development: Learning for Life".

For more information, write to:

T.T.Mokoena, Chairman of CASTME Conference Organizing Committee, University of Botswana, Private Bag 0022, Gaborone, Botswana

* AMESA Congress in South Africa

The Association of Mathematics Education for South Africa (AMESA) organizes a Congress on "Mathematics Education: Redress, Access and Success", to held from July 3 to 7 at the University of Witswaterand (Johannesburg). There will be a plenary panel discussion on Ethnomathematics.

For more information, write to:

Karin Brodie, AMESA, P.O. Box 450, Wits 2050, South Africa (Fax: [011] 339-1937)

7.4 New resource centres for indigenous knowledge

In AMUCHMA 11:6.3 information was given on the creation of the African Resource Centre for Indigenous Knowledge (ARCIK) and of the national centres for indigenous knowledge in Ghana and Kenya. In the meantime new national centres have been created in several African countries:

* Burkina Faso Resource Centre for Indigenous Knowledge (Burcik) [Centre Burkinabé de Recherche sur les Pratiques et Savoirs Paysans], B.P.7047, Ouagadougou, Burkina Faso
* Cameroon Indigenous Knowledge Organization (CIKO), P.O.Box 170, Buea, South-West Province, Cameroon;
* Nigerian Centre for Indigenous Knowledge (NIRCIK), c/o Institute for Agricultural Research, Ahmadu Bello University, PMB 1044, Zaria, Nigeria;
* South African Resource Centre for Indigenous Knowledge (SARCIK), c/o Institute for Indigenous Theory and Practice, 110 Long Street, 8001 Cape Town, South Africa.

7.5 Newsletters

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

* **Science and Empire Newsletter**

The Science and Empire Network was initiated in 1990 by scholars from NISTADS (New Delhi, India) and REHSEIS (Paris, France). It concerns scholars working on historical or contemporary aspects of science, technology, colonization, cross-cultural interaction, development and neo-colonialism. Among the aims of the network is to bring together studies being carried out in different countries, particularly in Asia, Africa and Latin-America, with a view to draw an overall picture and to make comparative studies. To receive the Science and Empire Newsletter free of charge, write to:

* Patrick Petitjean, REHSEIS, 27, rue Damesme, 75013 Paris, France (Fax: (33-1) 45.80.78.47;

or to:

* NISTADS (CSIR), Hillside Road, New Delhi - 110012 India (Fax: 011-575.46.40)

* **Philosophy of Mathematics Education Newsletter**

The aims of the Philosophy of Mathematics Education Newsletter (POMENEWS) are: to foster awareness of philosophical aspects of mathematics education and mathematics understood broadly; to disseminate news of events and new thinking in these topics to interested persons; and to encourage informal communication, international cooperation and dialogue between teachers, scholars and others engaged in such research. For more information, write to:

* Paul Ernest, POME Group Chair, University of Exeter, School of Education, Exeter EX1 2LU, United Kingdom (Fax: 03-92-264857).

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).
* D'Ambrosio, Ubiratan: Rua Peixote Gomide 1772 Ap.83, CEP 01409 São Paulo SP, Brazil (Fax: 55-11-280-0266)
* Bishop, Alan: Faculty of Education, Monash University, Clayton, Melbourne, Victoria, Australia 3168 (Fax: 61- 3 - 565-3668)
* Cherinda, Marcos: Departamento de Matemática, Instituto Superior Pedagógico, P.O.Box 3276, Maputo, Mozambique
* Djebbar, Ahmed: Ministry of National Education, Algiers, Algeria (Fax: 213-2-393658)
* 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)
* Ismael, Abdulcarimo: Departamento de Matemática, Instituto Superior Pedagógico, P.O.Box 3276, Maputo, Mozambique (Fax: 258-1-422113)
* Kuku, Aderemi: President African Mathematical Union, c/o Department of Mathematics, University of Ibadan, Ibadan, Nigeria
* Mapapá, Abílio: Departamento de Matemática, Instituto Superior Pedagógico, P.O.Box 3276, Maputo, Mozambique
* Mtetwa, David: Faculty of Education, University of Zimbabwe, P.O.Box MP 167, Mount Pleasant, Harare, Zimbabwe (Fax: 263-4-732828)
* T.T.Mokoena: University of Botswana, Private Bag 0022, Gaborone, Botswana
* Seka, Beniel: Institute of Curriculum Development, P.O.Box 35094, Dar es Salaam (Fax: 41905)
* Shabani, Juma: Deputy Secretary-General, Association of African Universities, P.O.Box 5744, Accra-North, Ghana (Fax: 233-21-774821)
* Soares, Daniel: Departamento de Matemática, Instituto Superior Pedagógico, P.O.Box 2025, Beira, Mozambique
* Uaila, Evaristo: Departamento de Matemática, Instituto Superior Pedagógico, P.O.Box 2025, Beira, Mozambique
* Williams, Grace Alele: Mathematics Education, Faculty / Institute of Education, University of Lagos, Akoka, Lagos, Nigeria
* Wilson, Bryan: Mirembe, Mews Lane, Winchester S022 4PS, U.K.

* Zaslavsky, Claudia: 45 Fairview Avenue, 13-1, New York NY 10040, USA

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
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.