ICMI

BULLETIN

OF THE

INTERNATIONAL COMMISSION

ON

MATHEMATICAL INSTRUCTION

No. 8

December   1976

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INTERNATIONAL COMMISSION ON
MATHEMATICAL INSTRUCTION

Executive Committee

(1 January 1975 - 31 December 1978)

President:	Professor S. Iyanaga
Vice-Presidents:	Professor B. Christiansen
	Professor H. G. Steiner
Secretary:	Professor Y. Kawada
Members:	Professor E. G. Begle
	Professor L. D. Kudrjavcev
	Professor Sir James Lighthill

I   REPORT BY THE PRESIDENT

S. Iyanaga

The most important event for our Commission during the past months was certainly the 3rd ICME (International Congress on Mathematical Education) held at Karlsruhe University, F. R. of Germany, from August 10 to 21, 1976. The last issue of this Bulletin contained the 2nd Announcement of this Congress. This issue contains its report and also a report of the General Assembly of our Commission held at that occasion. This last report will inform the reader also of what we are intending to do in the coming period.

I must apologize again for the delay of publication of this issue, previously foreseen in October 1976. The Local Organizing Committee of the 3rd ICME needed some time to establish precise statistics concerning its participants, so that their manuscript reached us only in the latter part of December 1976. I hope, however, to be able to publish the next issue, No.9, in April 1977, as scheduled.

II EXTRAIT DES ACTES OU

PREMIER CONGRES PAN-AFRICAIN DES MATHEMATICIENS

H. Hogbe-Nlend*

Le premier congrès Pan-Africain des Mathématiciens s'est tenù à Rabat (Maroc) du 26 au 31 Juillet 1976. Ce Congrès, placé sous la Présidence d'Honneur de Sa Majesté le Roi Hassan II, a été organisé avec le soutien de l'UNESCO et de l'Union Mathématique Internationale. Son Comité d'Organisation était exclusivement composé de mathématiciens africains. Son Président était le Professeur HOGBE-NLEND (Caméroun), son Secrétaire le Professeur KHALIL (Maroc).

Le Thème général du Congrès était "LES MATHEMATIQUES ET LE DEVELOPPEMENT DE L'AFRIQUE".

Le Programme général de ce Congrès comportait deux parties:

A. - Une partie de "technique mathématique" proprement dite, consistant en une série d'environ 80 conférences et communications mathématiques, portant principalement sur des disciplines mathématiques les plus proches des applications aux autres sciences et à la technologie.

B. - Une partie de "politique scientifique" et d'organisation portant sur les trois sujets suivants:
  a) Enseignement des Mathématiques en Afrique;
  b) Coopération dans le domaine des mathématiques et leurs applications;
  c) Création d'une association savante africaine dénommée "Union Mathématique Africaine" (U.M.A.) par l'élaboration et l'adoption de ses Statuts et l'élection de son organe directeur.

La liste définitive des participants au Congrès sera publiée ultérieurement. Les premières décomptes fournissent actuellement les chiffres suivants:

- Nombre de participants mathématiciens africains ou non africains: I71

- Nombre de pays africains représentés: 23
      Bénin, Caméroun, Congo, Côte d'Ivoire, Egypte, Ethiopie, Ghana, Haute Volta, Kenya, Mali, Maroc, Mauritanie, Niger, Nigéria, Ouganda, Sénégal, Sierra Léone, Soudan, Swaziland, Tanzanie, Togo, Tunisie, Zaïre

* Président du Comité d'Organisation, Université de Bordeaux.

- Nombre de pays non africains représentés: 15
    Allemagne, Belgique, Brésil, Canada, Espagne, France,
    Grande Bretagne, Irlande, Italie, Japon, Koweit, Pologne,
    Scotland, U.R.S.S., U.S.A.

- Invités des organisations pan-africaines ou
  internationales: 5
    UNESCO: M. Akl
    UNION MATHEMATIQUE INTERNATIONALE (U.M.I.):
        Prof. J. L. Lions, Prof. A. J. Coleman
    ASSOCIATION DES UNIVERSITES AFRICAINES (A.U.A.):
        Recteur Ba Boubakar
    CONFERENCE DES RECTEURS DES UNIVERSITES AFRICAINES
        (C.R.U.A.): Recteur A. Ndinga
    ASSOCIATION INTER-AMERICAINE POUR L'ENSEIGNEMENT MATHE-
        MATIQUES: Prof. Ubiratan D'Ambrosio

RESOLUTION GENERALE

Les mathématiciens africains, réunis à Rabat du 26 au 31 juillet 1976 dans le
cadre du Premier Congrès Pan-Africain des Mathématiciens, après une analyse
approfondie de la situation mathématique en Afrique et du rôle capital des
mathématiques dans le processus du développement du continent, ont convenu
de ce qui suit:

I. ENSEIGNEMENT DES MATHEMATIQUES EN AFRIQUE

1) Le Congrès s'élève contre toute importation de structures scolaires
   ou universitaires par les pays africains et suggère l'élaboration de
   systèmes d'enseignement et de programmes conformes à nos soucis de
   développement.

2) Le Congrès recommande l'organisation d'au moins une grande réunion
   consacrée à l'enseignement mathématique pré-universitaire avec une
   large participation des enseignants du secondaire.

3) Le Congrès insiste sur le fait que l'enseignement pré-universitaire
   doit assurer la formation mathématique de base nécessaire à tous, qu'il
   ne doit pas avoir pour unique but la formation d'une élite destinée à
   l'Université, qu'il doit enfin assurer la maîtrise de la technologie
   par le plus grand nombre de jeunes Africains. Cependant, le Congrès
   estime que tout en tenant compte des impératifs technologiques et

économiques du continent africain, les programmes de mathématiques doivent également contribuer à la formation de futurs chercheurs. Le Congrès estime qu'il est fondamental de répondre à la question: "Qu'est-ce que l'on enseigne, à qui enseigne-t-on et pour quels buts?".

4) Le Congrès recommande que, une fois les objectifs fixés, les programmes de mathématiques soient élaborés de concert avec les utilisateurs.

5) Le Congrès désapprouve la copie des programmes d'une université par une autre, tout en souhaitant que nos universités restent ouvertes à l'expérience universitaire mondiale.

6) Le Congrès estime nécessaire l'élaboration d'une politique nationale de l'enseignement mathématique au niveau universitaire tenant compte de l'état actuel de l'enseignement pré-universitaire.

7) Le Congrès recommande que le contenu des programmes ait à la fois un aspect international, pan-africain et national.

8) Le Congrès estime que le plus important est de rechercher des voies appropriées d'application des mathématiques à la solution de nos problèmes de façon à garantir l'économie de temps indispensable pour combler notre retard.

9) S'agissant du problème de la documentation, le Congrès estime qu'il est urgent et fondamental que les livres et manuels scolaires et toutes les autres formes de publication soient conçus, écrits par des Africains, imprimés, édités et diffusés dans les pays africains.

II. COOPERATION

10) Le Congrès a examiné le problème de la coopération mathématique aux trois niveaux suivants: coopération nationale, coopération inter-africaine, coopération entre l'Afrique et les autres continents.

(Les recommandations du Congrès exposés en 11) - 14) ne seront pas reproduites ici.)

15) Le Congrès a accueilli chaleureusement l'idée de la création avec l'aide de l'UNESCO d'un "CENTRE INTERNATIONAL DE MATHEMATIQUE POUR LE DEVELOPPEMENT", et souhaite vivement que ce centre soit fixé en Afrique. Il lance un pressant appel à tous les gouvernements africains pour la réalisation rapide de ce projet.

III. PROGRAMME D'ACTIVITES DE L'UNION MATHEMATIQUE AFRICAINE 1976-1980.

16) Le Congrès a voté les statuts d'une Union Mathématique Africaine
(U.M.A.) dont le programme d'activités 1976-1980 est le suivant:

A. Enquête et Rapport détaillé sur les données statistiques actuelles
et les potentialités mathématiques de l'Afrique.
B. Organisation de l'Union, en particulier:
    a) Organisation du siège de l'Union.
    b) Promotion de la création des sections nationales de l'U.M.A. dans
       tous les pays africains.
    c) Lancement d'un Bulletin semestriel de liaison, organe d'informa-
       tions détaillées et de débats sur le développement de l'activité
       mathématique en Afrique.
    d) Lancement d'une revue mathématique africaine.
C. Activités Scientifiques
    a) Organisation des premiers cours inter-africains de Mathématiques
       de longue durée dont l'un au moins sera destiné aux étudiants du
       cycle de Doctorat l'un au moins aux ingénieurs, économistes,
       biologistes, socialogues, linguistes etc. ..., et l'un au moins
       consacré à l'informatique et technique des ordinateurs.
    b) Organisation des premiers colloquēs inter-africains de Mathéma-
       tiques par spécialités.
    c) Organisation d'au moins deux séminaires consacrés à l'enseignement
       mathématique pré-universitaire.
    d) Organisation des premières olympiades inter-africaines destinées
       au dépistage et encouragement des vocations mathématiques parmi
       les jeunes.
C. Activités de Coopération
    a) Organisation et développement des premiers centres d'information
       et de documentation scientifiques à vocations régionales.
    b) Organisation et développement des centres régionaux de rencontre
       comme celui de Oberwolfach en Allemagne par exemple.
    c) Encourager l'adhésion rapide des pays africains à l'U.M.I. par
       le biais des sections nationales de l'U.M.A.
    d) Encourager et organiser la circulation et l'échange des mathé-
       maticiens africains dans les Universités africaines.
    e) Promouvoir des séjours de longue durée en Afrique des Mathéma-
       ticiens des autres continents.

Le Premier Comité Exécutif de l'U.M.A. a été élu comme suit:

<u>President:</u> HOGBE-NLEND (Caméroun)

<u>Vice-Présidents:</u> HARZALLAH (Tunisie), ACHOUR (Egypt),
SAITOTI (Kenya), OWUCHE (Nigéria)

<u>Secrétaire général:</u> Idriss KHALIL (Maroc)

<u>Trésorier:</u> SALIOU TOURE (Côte d'Ivoire)

<u>Membres:</u> SEKOU TRAORE (Congo), OWUSU-ANSAH (Ghana), MAVINGA
(Zaïre), ALEMAYEHU (Ethiopie), ELSAWI Mohamed (Soudan)

Le Deuxième Congrès Pan-Africain des Mathématiciens aura lieu au Caméroun
en 1980.

III REPORT OF THE

3rd INTERNATIONAL CONGRESS ON MATHEMATICAL EDUCATION
16 - 21 August 1976, Karlsruhe

H. Kunle[*]

From August 16 to 21, 1976 the 3rd International Congress on Mathematical Education took place in Karlsruhe (Fed. Rep. of Germany). It was organised both by the International Commission on Mathematical Instruction (ICMI) and the German Subcommission of ICMI. The two preceding congresses of this kind were held in Lyon, France in 1969 and in Exeter, Great Britain in 1972. The 4th International Congress on Mathematical Education in 1980 has been placed in the USA by the ICMI.

1. Preparations for the Congress

Preparations for the Congress had begun as early as 1973. The planning of the programme was in charge of the International Programme Committee under the chairmanship of Prof. Dr. H. G. Steiner (Institut für Didaktik der Mathematik, University of Bielefeld). The organisatory preparations and the management were in the hands of the Local Organising Committee with Prof. Dr. H. Kunle (University of Karlsruhe) as its chairman. Honorary chairman of the Congress was Prof. Dr. Dr. h. c. Dr. h. c. H. Behnke (University of Münster). In three announcements (Spring 1975, early 1976, May/June 1976) the Congress was made public to those concerned in all parts of the world.

2. The Programme

The Congress started on Monday, August 16, 1976 at 4 p.m. with an opening session and addresses by the chairman of the Congress, the president and vice-president of the ICMI, the minister of education of the state of Baden-Württemberg, the Lord Mayor of the City of Karlsruhe as well as by the president and the chairman of the mathematics department of the University of Karlsruhe. 1,831 full members from almost 80 countries had come to the Congress in Karlsruhe, among them 1,281 from Western and Eastern Europe, 318 from North, Middle and South America, 123 from Asian countries (70 of them from Japan), 68 from African countries and 41 from Australia and New Zealand. In addition, 237 associate members had come.

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* Professor, University of Karlsruhe, Chairman of Local Organising Committee.

The particular emphasis of the Congress programme was on the main papers, the sections, the poster-sessions and a panel-discussion. Further activities within the Congress programme were the presentation of projects, workshops and working groups, the performance of films and an exhibition.

The programme was, on the one hand, meant to give a broad survey of current trends and problems in mathematical education in different countries; on the other hand, participants should have the opportunity to work on more specific subjects and according to their individual interests.

2.1 Main Papers during Plenary Sessions

The following main papers were presented by invited speakers:

Professor Sir James Lighthill: The Interaction between Mathematics and Society

Professor Michael F. Atiyah: Trends in Pure Mathematics

Professor Peter Hilton: Education in Mathematics and Science Today: The Spread of False Dichotomies

Professor Arnold Kirsch: Aspects of Simplification in Mathematical Education

Professor Georges Guilbaud: Mathematics and Approximations

2.2 Sections

The main emphasis of the Congress activities was on the 13 sections. Each section was opened with a survey-trend report presented by an invited speaker; a discussion of the report with the International Advisory Group and the participants in the sections followed. In addition, some short papers, submitted by Congress participants and selected by the Programme Committee in advance, were presented in each section or sub-section. Themes and reporters of the sections were:

A 1. Mathematics education at pre-school and primary level (ages 4-12)
F. Colmez, France
2. Mathematics education at upper primary and junior high school level (ages 10-16)
A, Z. Krygovska, Poland
3. Mathematics education at senior high school, college and university transition (ages 15-20)
D. A. Quadling, Great Britain
4. Mathematics education at university level (excluding teacher training)
J. H. van Lint, Netherlands

5. Adult and continuing education in mathematics (with reference to corre-
   spondence studies)
   R. M. Pengelly, Great Britain
6. The training and the professional life of mathematics teachers
   M. Otte, Germany
B 1. A critical analysis of curriculum development in mathematics education
   A. G. Howson, Great Britain
2. Methods and results of evaluation with respect to mathematics teaching
   J. Kilpatrick, USA
3. Overall goals and objectives for mathematics teaching (Why do we teach
   mathematics?)
   U. d'Ambrosio, Brasil
4. Research related to the mathematical learning process
   H. Bauersfeld, Germany
5. A critical analysis of the use of educational technology in mathematics
   teaching
   R. Heimer, USA
6. The interaction between mathematics and other school subjects (including
   integrated courses)
   H. O. Pollak, USA
7. The role of algorithms and computers in teaching mathematics at school
   A. Engel, Germany

The A-sections ran on Tuesday and Friday in the morning, the B-sections on
Tuesday and Friday in the afternoon in the 7 zones of the university campus.

2.3 Poster-Sessions

A total of about 190 short communications had been submitted by Congress
participants and were presented in the poster-sessions, where the authors
had the opportunity to display abstracts of their short communications on
poster boards and to discuss them with interested participants. The poster-
sessions ran on Thursday afternoon from 2 p.m. to 4 p.m. in the foyers next
to the lecture rooms of the respective sections. This component of the
programme was certainly a good chance for participants to discuss and get
into immediate contact with the authors.

2.4 Projects, Workshops and Working Groups

By invitation of the Local Organising Committee and the Programme Committee,
15 larger projects from 6 countries (USA, Great Britain, France, Italy,
Netherlands and the Fed. Rep. of Germany) were presented.

Four workshops gave Congress participants the opportunity to deal with more specific problems of mathematical education and to get practically involved; among others there were an ATM-workshop and a computer-workshop.

At many requests, some working groups of the 2nd International Congress in Exeter had the opportunity to meet again during the Congress in Karlsruhe. In addition, 4 new working groups with the following themse were formed:

A. Problems of information and documentation in mathematical education

B. National and international assessment of mathematical achievement

C. Problem solving, teaching strategies and conceptual development

D. Minimal mathematical competencies

The presentation of the projects, workshops and working groups took place on Tuesday afternoon from 5 p.m. on, on Thursday afternoon from 4 p.m. on, and on Friday afternoon from 4 p.m. on.

2.5 Exhibitions and Films

Several scientific institutions as well as about 40 publishers and firms from various countries took part in an exhibition lasting throughout the Congress.

Films on topics of mathematical education were shown on several days in the evening.

2.6 Further Activities

As part of the further Congress programme, the statutory General Assembly of ICMI took place. Furthermore, the chairmen of the national teachers' associations had a useful meeting for the sake of mutual information.

2.7 Social Activities Programme

The social activities programme was meant to give Congress participants the opportunity to become acquainted with the city of Karlsruhe and its surroundings, particularly the northern part of the Black Forest and to come into contact with others in either a more scientific or a more personal way. Wednesday afternoon was reserved for excursions by 13 different routes. In addition, there were receptions by the City and the University of Karlsruhe as well as a concert by the Radio Symphony Orchestra of Stuttgart in the Badische Staatstheater in Karlsruhe.

2.8 Panel Discussion and Closing Session

Chaired by Prof. H. Freudenthal, the topic: What May in the Future Computers

and Calculators Mean in Mathematical Education, was discussed. The participants
in the panel discussion were the professors U. d'Ambrosio, A. Engel, H. Meissner,
J. Nievergelt, H. O. Pollak.

The closing session of the Congress with the president of ICMI, Prof. S. Iyanaga
in the chair, followed.

3. Documentation of the Congress

The course and the results of the 3rd International Congress on Mathematical
Education will be documented in several parts:

Congress participants received the programme parts I to III.
Part I of the programme contains a general survey of the Congress programme
as well as a brief description of the projects, workshops and working groups.
Part II contains the abstracts of the survey-trend reports in the sections,
part III the abstracts of the short communications.

Part IV of the Congress programme, i.e. a list of all full members of the
Congress and their addresses will be published in January 1977, the Proceedings
of the 3rd International Congress on Mathematical Education will be published
in May 1977. The full versions of the main papers as well as reports on the
work in the sections, workshops, working groups and projects etc. will be
contained. Full members of the Congress will receive the list of full members
and the Proceedings without extra charge. A limited number of orders can be
filled, if you write:

> for the list of full members to the Local Organising Committee,
> University of Karlsruhe, Mathematisches Institut, Kaiserstr. 12,
> 7500 Karlsruhe, BR Deutschland,

> for the Proceedings to the Redaktion des Zentralblatts für Didaktik
> der Mathematik, University of Karlsruhe (West), Hertzstr. 16,
> 7500 Karlsruhe, BR Deutschland.

Furthermore, the full versions of the survey-trend reports in the sections
will be published by the UNESCO as volume 4 of the series "New Trends in
Mathematics Teaching".

IV   REPORT OF THE GENERAL ASSEMBLY OF ICMI, 1976

Y. Kawada*

This Assembly took place at Physics Building of Karlsruhe University on Aug. 19, 1976, 5:30-7:15 p.m., attended by the following participants:

Argentina   ˙L. A. Santaló (R)

Australia   ˙A. G. Aitkin, A. L. Blakers, D. Kennedy,
               B. H. Neumann (M), M. F. Newman (R)

Austria   E. Hlawka (R)

Bangladesh   S. M. Sharfuddin (R)

Belgium   C. De Munter, G. Noel (R), W. Servais,
               A. Vermandel

Brazil   U. d'Ambrosio

Canada   J. C. Egsgard, C. Gaulin, J. Del Grande

Chile   I. Harding

China-Taiwan   T. N. Hsü (D), W. -H. U. Huang, F. C. Liu

Czechoslovakia Jaukpin, J. Moravčík

Denmark   T. B. Andersen (D), B. Christiansen (Vice-President),
               C. J. Jørgen

Federal Republic
  of Germany   M. Barner, W. Böddeker, H. Kunle (R), J. Lehn,
               R. Lingenberg, J. Mohrhardt, H. Schaeben,
               H. -G. Steiner (Vice-President)

Finland   J. Paasonen (D)

France   C. Becques, A. Deledicq, J. Giraud (R), G. Glaeser,
               M. Glaymann, J. Lelong-Ferrand (M), A. Revuz

German Democratic
  Republic   K. Härtig (R)

Hungary   J. Szendrei (R), J. Surányi (M)

* Secretary of the ICMI.

India	P. L. Bhatnager (M, R), U. N. Singh
Ireland	J. A. Dunn
Israel	A. Markus (D)
Italy	E. Castelnuovo (M, R), C. Sitia
Japan	Y. Inoue, S. Iyanaga (President), Y. Kawada (Secretary, R), Z. Kobayashi, Y. Matsuo, K. Tamaki, T. Yajima
Luxemburg	L. Kieffer (R)
Netherlands	H. Freudenthal (Ex-Officio M), P. G. J. Vredenduin (R)
New Zealand	G. Knight (R)
Nigeria	S. A. Dada (R), G. A. Williams
Poland	Z. Semadeni (M, R)
Roumania	T. Roman (D)
Senegal	S. Niang (R)
South Africa	J. H. van der Merwe (R)
Spain	V. Enrique
Sweden	A. Nordlander (D)
Switzerland	A. Carrel (D)
Tunisia	M. Abdeljauad, S. Aïdi (D)
United Kingdom	J. Armitage (R), T. Fletcher, H. B. Griffiths (E), J. Lighthill (E), E. A. Maxwell, H. B. Shuard
U.S.A.	H. L. Alder, J. P. Becker, E. G. Begle (E), L. Henkin, E. Pavelka, M. Pavelka, V. D. Turner, J. G. Young
U.S.S.R.	L. D. Kudrjavcev (E)
Yugoslavia	J. Brkić, J. Smolec
UNESCO	E. Jacobsen, S. Passmann

D: National Delegates, E: Executive Committee Members,
M: Members-at-Large, R: National Representatives.

The meeting was conducted by the Executive Committee.

Copies of the following Agenda were distributed to the participants.

(I) Report:
  (1) Conferences on mathematical educations cosponsored by ICMI (or IMU) (Jan. 1, 1975 - Aug. 1976)
    (i) International colloquium on evolving a mathematical attitude in the secondary education, Nyiregyhaza (Hungary), August 18-23, 1975.
    (ii) International symposium on combinatorics and probability in primary schools, Warsaw (Poland), August 25-28, 1975.
    (iii) IFIP second world conference on computer education, Marseille (France), September 1-5, 1975.
    (iv) The fourth interamerican conference on mathematical education, Caracas (Venezuela), December 1-6, 1975.
    (v) Regional conference on development of integrated curriculum in mathematics for developing countries in Asia, Bharwari (India), December 15-20, 1975.
    (vi) The first Pan-African congress of mathematics, Rabat (Morocco), July 26-31, 1976.

  (2) Publication of ICMI Bulletin: No.5 April 1975; No.6 October 1975; No.7 April 1976.

(II) Countries applying for new membership of ICMI: Bangladesh, Iran, Malaysia, New Zealand, Philippines, Singapore.

(III) Proposals for future plans:
    (i) Informatics and mathematics in secondary schools, impacts and relationships, Varna (Bulgaria), September 13-18, 1977.
        To be organized by National Committee of Bulgarian Mathematiciens, the third technical committee of education of the International Federation for Information Processing (IFIP) and ICMI, proposed by Prof. B. Penkov (Bulgaria).
    (ii) Southeast Asian 1978 conference on mathematical education, Manila (the Philippines), April or May, 1978.
        To be organized by the mathematical society of the Philippines, the southeast Asian mathematical society, agencies of the government of the Republic of the Philippines and ICMI, proposed by Prof. B. F. Nebres (the Philippines).
    (iii) Regional ICMI seminar in Luxemburg in 1977 or 1978.
        Proposed by Prof. L. Kieffer (Luxemburg).

(IV) The next ICME:
Letter from Prof. J. P. Becker on the interest of USA in hosting the 4th ICME.

(V) Other items:
(i) Symposium (or seminar) on some topics in mathematical education at Helsinki (Finland) August 1978
(on the occasion of the International Congress of Mathematicians).
(ii) a) Formation of the regional chapters of ICMI, proposed by Prof. P. L. Bhatnagar (India).
b) Presentation of recommendations of Bharwari meeting by Prof. P. L. Bhatnagar.
(iii) Proposal to reactivate national subcommissions by Prof. A. Delessert (Switzerland).
(iv) Plea for participation of more primary and secondary school teachers for future programmes of ICMI, by Prof. J. Egsgard (USA and Canada).
(v) Proposal by Mr. R. McCreddin (Australia) to have a one day meeting, prior to the congress for members of executive bodies of national teachers associations to establish liaison and cooperation and to discuss problems of mutual concern. He also proposes that a topic for a section of congress be "International cooperation in mathematics education."
(vi) Continuation of activities concerning the relations between the History and Pedagogy of Mathematics. Proposed by Prof. Leo F. Rogers (GB).

Proceedings

1) Review of the Agenda.
The addition of the following items to the Agenda was proposed and approved:
(i) Relation between ICMI and CTS (ICSU Committee of Teaching of Science), proposed by Freudenthal (Netherlands).
(ii) Inclusion of ICME in ICSU list of meetings, proposed by Bhatnagar (India).
(iii) Collaboration with the newly formed African Mathematical Union, proposed by Semadeni (Poland).
(iv) Inclusion of the plan of a Conference on the problem of teachers training in Pécs (Hungary) in Aug. 1977 in the future plan of ICMI proposed by Surányi (Hungary).

2) On the exact names and addresses of national representatives.
Iyanaga (Japan) remarked that the list of names and addresses of national

representatives given in ICMI Bulletin no.5 contains some errors, which he intends to correct. For that purpose and for better communication in ICMI, he made a plea for keeping him informed of the exact names and addresses of the national representatives.

3) A brief report was given on the 6 meetings and publications mentioned in the Agenda (I).

4) Countries applying for membership to ICMI.
   After a report (with some comments), that 6 countries mentioned in the Agenda (II) are applying for the membership to ICMI, it was unanimously approved to admit all of them after necessary procedures according to the terms of reference of ICMI.

5) Proposals for future plans.
   It was approved, after some discussions, that ICMI should support the plans (i), (ii), (iii) in the Agenda (III) as well as the added Hungarian plan (iv); it was remarked, however, that the final decision on the modality of these supports should be taken by the Executive Committee, and that it is still possible for the Executive Committee to take up other similar proposals, which are not yet presented.

6) The next ICME (Agenda (IV)).
   Iyanaga (Japan) indicated that the USA is the only country that has hitherto expressed an interest in hosting the next ICME in 1980. Becker (USA) reiterated the strong interest of his country, supported by NCTM (National Council of Teachers of Mathematics), MAA (Mathematical Association of America) and the US Commission on Mathematical Instruction, and announced that further details about the site etc. are forthcoming in a formal written proposal at a later date. After some discussions, it was approved that the Executive Committee should support the US invitation. Interest was indicated by Australian participants that Australia might host some later ICME.

7) Symposium (or seminar) on mathematical education at 1978 at Helsinki (Agenda (V)(i)).
   It was agreed that the Executive Committee should make a plan of such a meeting in the light of the preceding meeting in Vancouver, 1974.

8) Regional Chapters of ICMI (Agenda (V)(ii)).
   Bhatnagar (India) requested the Executive Committee to take up the question whether regional chapters of ICMI might be formed, and commented that the participants of the India regional conference (1975) favored such a grouping.

9) Proposal to reactivate national subcommissions (Agenda (V)(iii)).
It was agreed that greater effort must be made to activate national sub-
commissions of ICMI. Steiner (FRG) commented that he sent out letters on
the 3rd ICME to 50 commissions and got only 12 responses.

10) Participation of more primary and secondary school teachers on future
ICME programs. (Agenda (V)(iv)).
Egsgard (USA) made a plea for the above, which was followed by discussions.

11) Proposal to have a one day meeting, prior to the congress for members of
executive bodies of national teachers associations (Agenda (V)(v)).
McCreddin (Australia) made this proposal, which was discussed.

12) Relation between ICMI with CTS (Item added by Freudenthal).
Freudenthal (Netherlands) related his experience as IMU representative
to CTS and raised a question whether it will be beneficial to ICMI to
stay in close relationship with CTS.

The time was running short, and the Assembly could reach no conclusion on
the subjects 10), 11), 12) nor had it time to discuss about the subjects
(V)(vi) in the Agenda and about the items (ii), (iii) added at the begin-
ning of the meeting. Iyanaga announced that these subjects will be dis-
cussed in the Executive Committee, and any conclusion reached will be
communicated in writing to interested persons.

Supplementary remarks (Iyanaga)

(a) The opinions brought forth in discussing the subjects 10), 11) will be
transferred to the Organizing Committee of the 4th ICME.

(b) Concerning 12), a new relationship between ICMI and CTS is now being
created, and it is hoped that the apprenension expressed by Freudenthal
will disappear.

(c) Concerning the added item (ii) (inclusion of ICME in ICSU list of meet-
ings.) It was revealed that it was by a simple mistake that the 3rd
ICME was not listed in ICSU meetings. There will be no fear for the
future.

(d) Concerning the added item (iii) (and also on the subject (V)(ii)).
The problem was discussed in the Executive Committee, where the opinion
was prevailing that ICMI should welcome the formation of similar organi-
zations like IACME, which will be affiliated to ICMI.

V FIRST COMMUNICATION OF THE
CONFERENCE ON THE PROBLEMS OF TRAINING OF TEACHERS
OF MATHEMATICS

23-27 April, 1977, Pécs, Hungary

A. Csàszar*

The Bolyai Jànos Mathematical Society intends to organize a Conference with foreign participants in Pécs /Hungary/ from 23 to 27 of August, 1977 on the problems of mathematics - teachers of training.

Suggested areas for discussion:
1. The mathematical curriculum in different types of teachers training institutions.
2. The place and role of methodology and pedagogy in teacher training. /These two words are used here in the sense of educational problems to be considered at teacher training which are either specific or non-specific to mathematics, respectively./
3. The organization of teacher training.
4. The further training /in-service training/ of teachers.

In each of these areas discussions could deal both with the present situation, and with plans for later developments in the countries of the participants, related to all types of teachers training institutions. Our aim is to exchange and pool information on successful /or disappointing/ experiences.

Our intention is to divide the work for most of the time among three main sections, related to the training of teachers of 6 to 10, 10 to 14, and 14 to 18 years old pupils, respectively.

The working languages of the Conference: English, French, German and Russian, with translation into Hungarian.

The chairman and the secretary of the Conference are Professor A. Csàszar and Miss A. Bartel at Bolyai Jànos Mathematical Society, H-1368 Budapest, P. O. B. 240.

VI   OTHER COMMUNICATIONS

1. OBITUARY NOTE

Professor P. L. Bhatnagar

Professor P. L. Bhatnagar, Director of the Mehta Research Institute of
Mathematics and Mathematical Research at Allahabad, India, and a Member
at Large of the ICMI elected at the General Assembly of the IMU at
Harrison Hotspring, Canada in August 1974, passed away suddenly on
October 5, 1976. This sad news reached us last October and filled us
with great sorrow. Professor Bhatnagar attended the General Assembly
of the ICMI at Karlsruhe last August, to which he contributed with
valuable proposals and which he animated with lively discussions. None
of us could then foresee that he would pass away so soon. The partici-
pants of the Regional Conference on Development of Integrated Curriculum
in Mathematics for Developing Countries in Asia, held at his Institute
in December 1975, will never forget with what tact and success he
organized this Conference, which was, to be sure, the starting point of
the coming era of the mathematical education in this part of the world.
We had to learn of his demise, when all of us had looked forward to his
growing rôle in our community and to the fruit of his efforts. We
express our deepest sympathy to his family and to his Indian colleagues
and should like to pray most sincerely for the repose of his soul.

2. NEW ADDRESSES

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