

IMU

B U L L E T I N

OF THE

INTERNATIONAL MATHEMATICAL UNION

No. 14 October 1978

SECRETARIAT

COLLEGE DE FRANCE

11, Place Marcelin Berthelot
75231 PARIS CEDEX 05 - FRANCE

INTERNATIONAL MATHEMATICAL UNION

EXECUTIVE COMMITTEE

(1 January 1975 - 31 December 1978)

President : Professor Deane Montgomery

Vice-Presidents : Professor J.W.S. Cassels
 Professor G. Vranceanu

Secretary : Professor J.L. Lions

Members : Professor E. Bombieri
 Professor M. Kneser
 Professor O. Lehto
 Professor M. Nagata
 Professor L.S. Pontrjagin

Past President : Professor K. Chandrasekharan

REPORT OF THE 38TH MEETING OF THE EXECUTIVE COMMITTEE

COLLEGE DE FRANCE, PARIS, April 17-18, 1978

The following members of the Executive Committee were present :

Professors K.Chandrasekharan, (Past President), J.W.S. Cassels, G. Vranceanu, (Vice-Presidents), E. Bombieri, M. Kneser, O. Lehto, M. Nagata, L. Pontrjagin, (Members), J.L. Lions (Secretary).

Professor D. Montgomery, President, could not attend for personal reasons, and Professor J.W.S. Cassels was in the chair.

SCIENTIFIC ACTIVITIES OF THE UNION :

The E.C. agreed to support with an amount of US. \$ 5,000- a colloquium in Bombay, India, January 1979, on Automorphic Forms, Representation Theory and Arithmetic. Professors Deligne and Kneser were nominated as Union representatives.

IMU Fellowship Fund (based on the grant given by Italy in 1975) :

Dr. Balasubramanian, from the Tata Institute, has been granted a fellowship to enable him to spend a three-months period at the Mittag-Leffler Institute in Sweden. His travel expenses and part of his stay (US\$ 600--) were taken care of by IMU.

PREPARATION OF THE GENERAL ASSEMBLY

The accounts were examined. A detailed report for the year 1977 has already been printed in the IMU Bulletin no. 13, July 1978.

A report on Travel Grants to Young Mathematicians for attending ICM was received and considered. A complete report is given later in this Bulletin.

There were also long discussions about the various slates to be proposed by the President at the next General Assembly, taking into account the recommendations of the National Committees which has already been received by the Secretary.

The E.C. proposed a draft agenda for the General Assembly at OTANIEMI and discussed the arrangements for it.

WORLD DIRECTORY OF MATHEMATICIANS

First, the Executive Committee expressed hearty thanks to Mrs. Frostman and to her son for the great courage with which they took up the job after Professor Frostman's death.

The E.C. recognized that although there will be delays, they are in no way the responsibility of Professor or Mrs. Frostman.

The Secretary was asked to write to Mrs. Frostman making this point and expressing the Union's grateful recognition of the great services of herself and her late husband.

It was noted that the Japanese mathematicians had already agreed to set up a committee under the chairmanship of Professor M. Nagata to deal with the 1982 edition of the World Directory of Mathematicians. Professor Nagata offered to take over the completion of the 1978 WDM. He explained how he intends to manage the work ; a one-year delay in publication must be foreseen, but publicity could start during ICM with requests for orders.

The E.C. agreed on this procedure and accepted with gratitude the Japanese proposal. The Secretary was instructed to act accordingly. It was also agreed that a separate account for WDM be kept and that a report be sent at the beginning of each year to the E.C. Another bank account should be opened in Japan for this purpose.

REPORT ON ICM '78

Professor O. Lehto reported on the state of preparation for the ICM The Third Announcement was being mailed at that date.

RESOLUTION FROM THE EXECUTIVE COMMITTEE

It was agreed that when the Executive Committee agrees to sponsor the scientific activities of the Union such as symposia, conferences-etc., the Secretary should remind the Organizers that the IMU is a non-political organization and should emphasize that the name of IMU should not be used, directly or indirectly, in any petition or other political activity.

It was agreed, further, that this resolution of the Executive Committee should be published in the IMU Bulletin.

The chairman closed the meeting at 6 p.m. on April 18, 1978.

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OBITUARY :

We regret to announce the death of the Chairman of the Czechoslovak National Committee for Mathematics, Professor Jiri Faberã, on June 18, 1978, at the age of 48.

Professor Faberã was Director of the Mathematical Institute of the Czechoslovak Academy of Sciences and Head of the Department of Mathematics at the Electrotechnical Faculty of the Czech Technical University in Prague.

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REPORT OF THE 39TH MEETING OF THE EXECUTIVE COMMITTEE

DIPOLI Center, OTANIEMI (FINLAND), August 10, 1978

All the members of the Executive Committee were present.

APPROVAL OF THE AGENDA AND OF THE MINUTES

The Agenda of the meeting and the Minutes of the 38th meeting of the E.C. were approved and formally signed.

PREPARATION OF THE GENERAL ASSEMBLY

The Executive Committee discussed on the preparation of the General Assembly, by going through the various items of the Agenda for this Assembly.

A report on the work of the Travel Grants Committee was made by its chairman, Professor J.W.S. Cassels. This report is given in Annexe 4 together with a list of the young mathematicians who are being supported, in Annexe 5. Professor O. Lehto announced that fees had been waived and that the accommodation for these mathematicians was free, and not as stated in the Report.

SITE COMMITTEE

The Site Committee was finalized at this meeting. The members are :

D. Montgomery, chairman ex-officio,
S. Iyanaga
O. Lehto
R. Nevanlinna
V.S.Vladimirov
G. Vranceanu
J.L.Lions, secretary.

SCIENTIFIC ACTIVITIES

It was reported that Professors Deligne and Kneser had agreed to be the Union's representatives at the Bombay Colloquium on Automorphic Forms, Representation Theory and Arithmetic (cf. report on previous meeting).

RECORD OF THE EIGHTH GENERAL ASSEMBLY
OF THE INTERNATIONAL MATHEMATICAL UNION

OTANIEMI, FINLAND, August 11-12, 1978

- § 1. The Assembly opened with a word of welcome by Professor O. Lehto, chairman of the Organizing Committee of the International Congress of Mathematicians, Helsinki, 1978.

The list of participants is given in Annexe 1.

- § 2. The provisional Agenda, which had been previously circulated, was approved. (Annexe 2).
The President then addressed the Assembly. This address is printed separately (Annexe 3).

§ 3. APPOINTMENT OF COMMITTEES OF THE ASSEMBLY

The President nominated, and the General Assembly approved the appointment of the following committees for the transaction of business :

CREDENTIALS COMMITTEE : C. Olech, chairman
 P.D.Lax
 B.H.Neumann
 O.E.Villamayor
 The Secretary (ex-officio)

NOMINATING COMMITTEE : The President (ex-officio, chairman)
 K. Chandrasekharan
 D. Guedes de Figueiredo
 S. Iyanaga
 B. Skökefalvi-Nagy
 R. Nevanlinna
 J. Neveu
 L.S.Pontrjagin

BUDGET COMMITTEE : I.M. James, chairman
R.H. Bing
E. Bambieri
H. Hogbe-Nlend
A.B. Pogorelov
C.S. Seshadri
J.L. Lions, secretary (ex-officio)

RESOLUTIONS COMMITTEE : L. Bers, chairman
M.G. Atiyah
V.S. Vladimirov
J.L. Lions, secretary (ex-officio)

TELLERS : M. Dvoretzky chairman
A. Salomaa
A.B. Ziscenko

The Credentials Committee reported that the credentials of the attending delegations were all in order.

The following member countries were not represented at the General Assembly :
CUBA (I), DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA (I), NORWAY (I),
PAKISTAN (II), PORTUGAL (I), TURKEY (I).

The total voting strength was 103 votes.

It was agreed that Nominating Committee might receive nominations for the new Executive Committee, from the floor as well as from the present E.C. till 2 p.m. on August 11, 1978, and would present a slate for election on August 12, 1978.

The Budget Committee held a meeting on August 11, after the General Assembly session. Its report was accepted by the Assembly (see § 7 below).

§ 4. APPOINTMENT OF WORKING GROUP TO CONSIDER THE ROLE OF THE COMMISSION ON ... EXCHANGE IN RELATION TO DEVELOPMENT.

The Executive recommended that the Assembly should consider the revision of the terms of reference of the Commission on Exchange (and possibly a change of title) so as to further the work of the Union in relation to Development.

After some discussion, a Working Group was appointed with the following composition :

J.W.S. Cassels, chairman
M.G. Atiyah
R.H. Bing
A.J. Coleman
A. Figa'-Talamanca
H. Hogbe-Nlend
O. Lehto
J.L. Lions
M. Nouri-Moghadam
C.S. Seshadri

For the report of this Working Group see § 5.

§ 5. ESTABLISHMENT OF COMMISSION ON DEVELOPMENT AND EXCHANGE

The General Assembly received an oral report from the chairman of the Working Group set up under Minute 4 together with a paper proposing terms of reference for a Commission on Development and Exchange which would replace the existing Commission on Exchange.

These proposals were accepted subject to minor modifications as Resolution 6 (see Annexe 8).

§ 6. REVIEW OF THE ACTIVITIES OF THE UNION

A. SCIENTIFIC ACTIVITIES

i) Scientific Meetings :

Nineteen symposia and conferences were held under the sponsorship of the Union during the 1974-1978 period. They are listed in the Report of the Executive Committee to the General Assembly, published in the Special Number of the IMU Bulletin devoted to the Assembly.

ii) IMU Lectures :

Two series of lectures were given in this period and published in L'Enseignement Mathématique (see also the Special Number of the IMU Bulletin)

iii) IMU Fellowship :

Two such grants were made, one to Dr. Swarup, from the Tata Institute in Bombay, who spent part of his stay in I.H.E.S. near Paris and the other part in Zürich at E.T.H. The second grant was made from part of the Italian donation to Dr. Balasubramanian who made a three-months visit to the Mittag-Leffler Institute in Sweden.

iv) I.C.M.I. :

The report of I.C.M.I. had been printed in the Special Number of the IMU Bulletin and distributed to all the members of the Assembly. Professor Iyanaga, chairman, gave a brief description of its contents.

The General Assembly expressed its deep appreciation of the work of the I.C.M.I. Commission and its Executive Committee, especially of that of its President, Professor Iyanaga and its Secretary, Professor Kawada.

v) Exchange Commission :

The report from Professor Coleman on the work of the Exchange Commission had been distributed (see also Special Number of the IMU Bulletin) and was commented by him.

The General Assembly expressed its deep appreciation of the work of Professor Coleman and in particular, of his success in raising funds for specific tasks.

This Commission will be replaced by a Commission on Development and Exchange, see above § 5.

B PUBLICATIONS OF THE UNION

i) IMU Bulletins

The following IMU Bulletins were published during this period : Numbers 9, 10, 11, 12 and 13, and the Special Number devoted to the General Assembly. 350 copies of the first three issues and 400 copies of the other three issues were distributed.

ii) Canberra Circulars

Delegates spoke in appreciation of the continued appearance of these Circulars, which carry much useful information.

The General Assembly expressed its thanks to the Australian National University and to Professor B.H. Neumann (see Resolution no. 9).

iii) WORLD DIRECTORY OF MATHEMATICIANS

Professor Frostman died on December 29, 1977. Mrs. L. Frostman and her son gave great assistance to the Executive Committee in the transfer of all information to Professor M. Nagata, who has agreed to take the responsibility of the new edition of the W.D.M.

The General Assembly expressed its deep appreciation of the work done by Professor Frostman.

After discussing on the rôle of the World Directory of Mathematicians, it was decided to proceed with this publication.

The four-years period accounts are shown with the general accounts.

IMPORTANT NOTICE :

All information connected with the WORLD DIRECTORY OF MATHEMATICIANS should be sent to :

BUREAU OF THE W.D.M.
Mathematics Department
KYOTO UNIVERSITY
KYOTO 606 (JAPAN)

C REPORT OF THE COMMITTEE ON TRAVEL GRANTS TO YOUNG MATHEMATICIANS

The report from Professor Cassels, chairman was circulated and is printed in Annexe 4 of this Bulletin.

The General Assembly thanked the committee for its work.

The General Assembly also expressed its appreciation of the generosity of the Government of Finland and of the Organizing Committee of the I.C.M. (Resolution 1).

The General Assembly also expressed its gratitude to UNESCO, for a special supplementary grant of US \$ 2,000-, to COSTED for its grant of US \$ 2,000- and to I.C.L. for its grant of Sterl. Pounds 200.-.

§ 7. RELATIONS WITH ICSU

- a) The text of the last ICSU Resolution on Free Circulation of Scientists had been printed in the Special Number of the Bulletin. After considerable discussion, the General Assembly adopted Resolution 10⁽¹⁾
- b) ICSU Recommendation on Tax on scientific participants to meetings. This recommendation was not supported by the Executive Committee and the General Assembly unanimously approved Resolution 3 to that effect.

§ 8. FINANCE AND DUES

Professor I.M. James, chairman of the Budget Committee, reported that this Committee approved the financial reports and the draft budget estimates. He made the following remarks :

- the Budget Committee had made some detailed proposals for the simplification of the form of the accounts. These would be given to the Secretary in writing.
- World Directory of Mathematicians : separate accounts should be kept for each edition.
- Special Appeal Fund : if the response of member-countries is inadequate, then the budget should decrease accordingly.

The audited accounts for the years 1974-1977 and the budget, recommended by the Budget Committee for the forthcoming period 1979-1982, were also formally approved. See Annexe 6.

The General Assembly also approved the proviso that, if Special Appeal Fund were unsuccessful, then the scientific activities (schedule B of the budget) should decrease accordingly. (See Section 11 of this report).

⁽¹⁾ For clarity of presentation we do not follow the chronological order of items discussed in the latter part of the meeting.

§ 9. ELECTIONS

The General Assembly elected the following :

a) EXECUTIVE COMMITTEE :

President :	L. Carleson
Vice-Presidents :	M. Nagata
	V. Prohorov
Secretary :	J.L. Lions
Members :	E. Bombieri
	J.W.S. Cassels
	M. Kneser
	O. Lehto
	C. Olech

The retiring President, Professor Deane Montgomery, will be an ex-officio member of the Executive Committee, without vote.

b) I.C.M.I. (Ten members-at-large)

The President invited the delegations to suggest to him names of possible candidates for election as members-at-large of I.C.M.I. He then nominated 14 candidates, from whom the Assembly elected the following ten :

H. Whitney	(U.S.A.)
M. Barner	(B.D.R.)
E. Castelnuovo	(Italy)
H. Halberstam	(U.K.)
P. Hilton	(U.S.A.)
Y. Kawada	(Japan)
L.D. Kudrjavcev	(U.S.S.R.)
B. Malgrange	(France)
B.H. Neumann	(Australia)
Z. Semadeni	(Poland)

The Past President of ICMI, the Secretary of IMU, and the representative of the Union on the ICSU Committee on the Teaching of Science (C.T.S.), are members ex-officio of ICMI.

Professor Christiansen agreed to be IMU representative on CTS.

The President then nominated Professor H. Whitney as President of ICMI.

c) COMMISSION ON DEVELOPMENT AND EXCHANGE :

Out of the names suggested by delegations for the new Commission on Development and Exchange (C.D.E.), the following nine were elected :

H. Hogbe-Nlend
M.G. Atiyah
A.J. Coleman
D. Guedes de Figueiredo
K. Ito
G.D. Mostow
B. Skökefalvi-Nagy
M.S. Narasimhan
A.D. Pogorelov
The Secretary of the Union (ex-officio)

The President appointed Professor Hogbe-Nlend as chairman.

§ 10. IMU AND THE INTERNATIONAL CONGRESS OF MATHEMATICIANS

Professor Lipman Bers, leader of the U.S. delegation, proposed for discussion two alternative draft resolutions dealing with the free circulation of scientists and endorsing the ICSU Resolutions of September 1974 and October 1976.

Professor L. Pontrjagin, on behalf of the USSR delegation, said that the organization of the ICM should be changed, so as to give a much more important rôle to the National Committees, and he proposed a resolution.

Several delegates objected to this view-point. In particular some delegates from small countries and from developing countries felt that a change of this kind in the method of selection would not be appropriate for mathematicians in their countries.

In the discussion several texts for resolutions were proposed, coming from both the floor and from members of the Executive Committee. Finally the Resolution 10 (Free circulation of scientists) and 12 (Improvement of selecting invited speakers) were adopted. See Annexe 8 .

§ 11. NEXT MEETING OF THE GENERAL ASSEMBLY

The General Assembly decided that the next meeting would be held at about the same time and place as the next International Congress of Mathematicians. See Resolution 5.

§ 12. SPECIAL APPEAL FUND.

As already noted by the Executive Committee and the Budget Committee (see § 8), the forthcoming budget for the period 1979-1982 is based on the assumption that a significant sum be contributed in response to the appeal.

The French delegates announced that France was ready to make a substantial contribution, the exact amount of it to be determined in the near future. Then the Italian delegation announced that Italy (which had already contributed 5 Million Lire to the Fellowship Fund in 1974) was also ready to make a new contribution, the exact amount to be determined in the near future.

The General Assembly greeted these announcements with applause.

The Secretary again expressed the hope that several other contributions would soon be forthcoming.

§ 13. RESOLUTIONS

The Resolutions adopted by the Assembly are listed in Annexe 8.

REPORT ON THE INTERNATIONAL CONGRESS OF MATHEMATICIANS

HELSINKI, FINLAND, August 15-23, 1978

The Congress was held in Helsinki and had about 3.100 participants, ordinary members and, in all more than 4.000 members including accompanying members.

There were 137 invited speakers with 120 present ; 17 could not come out of whom 15 from one country.

Members of the Congress had the privilege of presenting 15 minute oral communications of their mathematical work.

Moreover, other mathematical activities such as :

Mathematics and Society,

I.C.M.I.

History of Mathematics,

were discussed in parallel sessions, unscheduled gatherings and small seminars, as well as regional working groups were held.

The International Mathematical Union made an outstanding effort towards young mathematicians to enable them to attend the ICM, whose names had been selected by a "Committee on Travel Grants to Young Mathematicians", appointed by the E.C. of the Union. More than 94 applications were received and 47 young mathematicians selected, coming from every part of the world. The Union, with the help of UNESCO, COSTED & ICL, contributed to their travel expenses meanwhile the Finnish Government and the Organizing Committee for the ICM provided them with free accommodation and waived their Congress fees.

At the opening Ceremony of the Congress, in Finlandia Hall, Professor O. Lehto was elected President of the Congress and Professor R. Nevanlinna was elected Honorary President.

The chairman of the Fields Medals Committee, Professor D. Montgomery, President of I.M.U., told the assembly that the Committee awarded four medals to : Professors P. Deligne (I.H.E.S., France), Ch. Feffermann (U.S.A.), D. Quillen (U.S.A.), and G. A. Margulis (U.S.S.R.), who unfortunately could not come. The medals were presented to the grantees by Professor R. Nevanlinna.

Then, the Ministry of Education, the Mayor of the City of Helsinki, the Rector of the University of Helsinki gave an address of welcome, wishing every participant a pleasant and fruitful Congress.

The closing Ceremony of the Congress begun with the report on the General Assembly of the Union made by Professor J.W.S. Cassels, Vice-President of I.M.U. He gave the names of the new elected Executive Committee and explained briefly the main decisions of the Assembly.

Then, on behalf of the Polish National Committee for Mathematics, Professor K. Urbanik invited the next Congress of Mathematicians to be held in Warsaw, in 1982. He emphasized that this invitation had the support of the Polish Government and of the Polish Academy of Sciences ; the same effort towards the young mathematicians can be foreseen and he added that he wished to welcome all of the participants next time in Warsaw.

Professor K. Chandrasekharan conveyed the thanks of the mathematical community towards the President Kekkonen who contributed to the success of the Congress. He also congratulated the City of Helsinki, the University, the Academy, the Lord-Mayor, the students and the secretaries of the University and of the Mathematics Department for their efforts and contribution to the realization of such a meeting.

Professor Skökefalvi-Nagy thanked the Organizers for their help and cooperation ; he also expressed the thanks of the attendance to the Congress for the social programme that had been set up and that had given the possibility of discovering beautiful Finland. He added the most grateful thanks to the organizers of the Congress and to Professor O. Lehto.

Professor O. Lehto thanked Professors Chandrasekharan and B. Skökefalvi-Nagy for their kind words. He gave a brief report of the activities and of the attendance to the I.C.M. - this address will be printed in the proceedings of the Congress. He specially thanked Professor R. Nevanlinna who had been more than an Honorary President, and wished every success to the organizers of the next I.C.M.

ANNEXE 1

LIST OF PARTICIPANTS

(a) EXECUTIVE COMMITTEE

President :	Professor D. Montgomery
Vice-Presidents :	Professor J.W.S. Cassels Professor G. Vranceanu
Secretary :	Professor J.L. Lions
Members :	Professor E. Bombieri Professor M. Kneser Professor O. Lehto Professor M. Nagata Professor L.S. Pontrjagin
Past President :	Professor K. Chandrasekharan

(b) DELEGATES

ARGENTINA :	(I)	Professor O.E. Villamayor
AUSTRALIA	(III)	Emeritus Professor B.H. Neumann Professor J.P.O. Silberstein Professor G.E. Wall
AUSTRIA	(II)	Professor Dr. P. Grüber Professor Dr. E. Hlawka
BELGIUM	(III)	Professor W. Kuijk
BRAZIL	(II)	Professor D. Guedes de Figueiredo Professor J. Palis Jr.
BULGARIA	(II)	Professor Dr. L. Iliev Professor Dr. P. Kenderov
CAMEROON	(I)	Professor H. Hogbe-Nlend
CANADA	(III)	Professor A.J. Coleman Professor T. Husain Professor R. Vaillancourt
CUBA	(I)	...
CZECHOSLOVAKIA	(III)	Professor Dr. M. Fiedler Doc. Dr. A. Kufner

DENMARK :	(II)	Professor B. Fuglede Professor L. Kristensen
ARAB REP. OF EGYPT :	(I)	Professor A.A.Ashour
FINLAND :	(II)	Academician R. Nevanlinna Professor A. Salomaa
FRANCE :	(V)	Professor A. Brunel Professor J.L. Koszul Professor G. Mokobodzki Professor J. Neveu Professor J.L. Verdier
FEDERAL REP. OF GERMANY :	(V)	Professor Dr. M. Barner Professor Dr. H. Bauer Professor Dr. K.P. Grottemeyer Professor Dr. H. Tietz Professor Dr. H. Witting
GERMAN DEMOCRATIC REP. :	(III)	Professor Dr. L. Budach Professor Dr. K. Matthes Professor Dr. A. Pietsch
GREECE :	(I)	Professor N. Artemiadis
HUNGARY :	(III)	Professor B. Skökefalvi-Nagy Professor E. Fried Professor J. Surányi
ICELAND :	(I)	Professor E. Briem
INDIA :	(III)	Professor C.S. Seshadri
IRAN :	(II)	Professor K. Lellahi Professor M. Nouri-Moghadam
IRELAND :	(II)	Professor S.S. Tobin Professor T.T. West
ISRAEL :	(II)	Professor A. Dvoretzky Professor E. Netanyahu
ITALY :	(IV)	Professor C. Ciliberto Professor A. Figà-Talamanca Professor C. Pucci

JAPAN :	(V)	Professor A. Hattori Professor K. Ito Professor S. Iyanaga Professor S. Mizohata Professor M. Nagata
DEM. PEOPLE'S REP. OF KOREA :	(I)	...
MEXICO :	(I)	Dr. S. Gitler
THE NETHERLANDS :	(III)	Professor Dr. P.C. Baayen Professor Dr. H. Bavinck Professor Dr. R. Tijdenman
NEW ZEALAND :	(I)	Professor G.C. Wake
NIGERIA :	(I)	Professor O.A. Olubummo
NORWAY :	(I)	...
PAKISTAN :	(II)	...
REP. OF THE PHILIPPINES :	(I)	Dr. Jose A. Marasigan
POLAND :	(IV)	Professor B. Bojarski Professor C. Olech Professor Z. Semadeni Professor K. Urbanik
PORTUGAL :	(I)	...
ROMANIA :	(II)	Professor C. Jacob Professor G. Vranceanu
REP. OF SINGAPORE :	(I)	Dr. Chong Chi Tat
SOUTH AFRICA :	(II)	Professor H.S.P. Grässer
SPAIN :	(II)	Professor J.M. Aroca
SWEDEN :	(III)	Professor L. Carleson Professor V. Thomée
SWITZERLAND :	(III)	Professor A. Delessert
REP. OF CHINA-TAIWAN :	(I)	Professor Neng-che Yeh
TURKEY :	(I)	...

- UNITED KINGDOM : (V) Professor M.F. Atiyah
Professor W.N. Everitt
Professor H. Halberstam
Mr. D.W. Harlow
Professor I.M. James
- U.S.A. : (V) Professor L. Bers
Professor R.H. Bing
Professor S.S. Chern
Professor D. Gorenstein
Professor P.D. Lax
- U.S.S.R. : (V) Professor Acad. A.B. Pogorelov
Professor Acad. L.S. Pontrjagin
Professor Acad. V.S. Vladimirov
Professor A.B. Zizcenko
- YUGOSLAVIA (II) Professor Dr. D. Kurepa

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ANNEXE 2

AGENDA

1. Opening of the Assembly.
2. Address by the President.
3. Appointment of Committees :
 - (i) Credential Committee, (ii) Resolutions Committee, (iii) Tellers, (iv) Committee on Finance and Dues, (v) Nominating Committee.
4. Review of the Activities of the Union :
 - A. (i) Symposia, Conferences, (ii) IMU Lectures, (iii) IMU Fellowships (iv) ICMI, (v) Exchange Commission and Development.
 - B. (i) IMU Bulletin, (ii) Canberra Circulars, (iii) W.D.M.
 - C. Support for the Organization of the International Congress of Mathematicians ; grant to young mathematicians from developing countries.
5. Relations with ICSU :
 - (a) ICSU Resolution on Free Circulation of Scientists.
 - (b) ICSU Recommendation on tax of scientific participants to meetings.
6. Finance and Dues :
 - A. Financial reports for the years 1974-1977.
 - B. Proposals for 1979-1982 :

The Executive Committee does not propose an increase in dues but it proposes a special appeal for contributions to finance the development activities, beginning with the allocation of not less than USD. 20,000 for the period 1979-1982.
 - C. Budget estimates for 1979-1982.
7. Elections : (i) Commissions , (ii) Executive Committee.
8. Approval of the budget 1979-1982.
9. IMU and the International Congress of Mathematicians.
10. Adoption of Resolutions.
11. Next meeting of the General Assembly.
12. Any other item with the permission of the President.

ANNEXE 3

ADDRESS BY THE PRESIDENT

Ladies and Gentlemen :

1. It is a pleasure to welcome you all to the Eighth General Assembly of the International Mathematical Union, and especially to greet the new members of our Union : Iran, Arab Republic of Egypt, Republic of Singapore, Cameroon, The Republic of the Philippines.

Let me also extend this welcome to the delegates of those countries, already members of the Union, but that are represented for the first time in this General Assembly. We are also happy to extend a special welcome to the delegates of countries that changed group number during this four-year period, Ireland, Brazil. Iran, although a new member, also belongs to Group II.

It is a particular pleasure to welcome as delegate Professor R. Nevanlinna, former President of our Union.

Among those mathematicians who left us during the past four years, let me mention the names of Professor Morse, who had been Vice-President of the Union, of Professor O. Frostman, who has been Secretary of the Union from 1967 to 1974 and who spent so much energy with the World Directory of Mathematicians, a task he maintained until his death in last December. Professor Academician Nicolescu, who has been elected at the last General Assembly and was Vice-President of the Union, left us in June 1975.

2. The International Mathematical Union is a strictly non-political and non-governmental Union. Members are countries or geographic areas, not individuals. Adherence to the Union is through a National Adhering Organization (N.A.O.) which is represented by its National Committee (N.C.). Five groups of adherence (I to V) span the mathematical activity of the Union, the number of votes being equal to the index of the group to which a country belongs.

The objects of the Union are :

- a) to promote international cooperation in Mathematics,
- b) to support and assist the International Congress of Mathematicians, and other international scientific meetings or conferences,

- c) to encourage and support other international mathematical activities considered likely to contribute to the development of mathematical science in any of its aspects, pure, applied, or educational.

The International Mathematical Union is a member of ICSU (International Council of Scientific Unions).

3. OBJECT (a).

A necessary condition for international cooperation is the principle of free circulation of scientists. As a member of ICSU, the Union is committed to this principle. The text of this principle, unanimously supported by all the members of ICSU (¹), is presented in the Special Number of our Bulletin that you received for the preparation of this General Assembly.

The Union achieves this international cooperation by various means :

- I.C.M.I. (International Commission on Mathematical Instruction)
- Various Symposia ; we shall return to this point in a moment ;
- IMU Lectures ;
- Exchange Commission that made possible to support the travel of several mathematicians ; we shall return to the activity of this Commission in a moment.

4. OBJECT (b).

As you well know, one of the stated objects of the Union is to support and assist the International Congress of Mathematicians. The Organizing Committee of the Helsinki Congress, and the Executive Committee of the Union, have worked together on a friendly basis. Our particular thanks are due to Professor O. Lehto chairman of the Organizing Committee.

By a regulation of the Union, the task of preparing the scientific programme was carried out by a Consultative Committee consisting of eight members, two being nominated by the Organizing Committee of the Congress; six others being nominated by the Executive Committee of the Union, and of a chairman appointed by the President of the Union.

(¹) Members of ICSU are Unions and Countries.

The Consultative Committee consisted of : Professor A. Borel, chairman, and Professors J.F. Adams, S.S. Chern, Y. Kawada, O. Lehto, I.S. Louhivaara, B. Malgrange, S.M. Nikol'skii, C. Olech, members.

I wish to take this opportunity to express our hearty thanks to them.

The Union has also made a non-trivial financial contribution in support of the Congress. Let me emphasize in this respect the effort made by this Union to partially support the travel and living expenses of young mathematicians from developing countries or from countries where severe monetary problems arise. A sum of 25,000 US dollars has been raised for this purpose that enabled the Union to support the visits of 47 mathematicians.

The Organizing Committee has generously waived fees for people so supported and, with the equally generous help of the Finnish Government, has provided them with free accommodation.

Other international scientific meetings were encouraged and helped during this period.

Nineteen symposia were held, with the sponsorship and the help of the Union, some of them of an interdisciplinary nature, such as the ones of the series Joint IMU-IUTAM Symposia.

5. OBJECT (c).

Promotion of the development of Mathematics : the Exchange Commission, the chairman of which is Professor A.J. Coleman (one of the delegates of Canada), was able to support with the generous grants of C.I.D.A., a meeting in Rabat, in 1976, where the African Mathematical Union was founded ; we are happy to welcome here, the President and the Secretary of this A.M.U., who attend this meeting as representatives of their own country member, Professor Hogbe-Nlend, for Cameroon and Professor A. Ashour, for the Arab Republic of Egypt.

In connection with the objects of the Union, we want also to thank those who contribute to the Canberra circulars for their untiring efforts, and especially Professor B.H. Neumann, one of the delegates from Australia.

Among many things, these letters help in the development of Mathematics in the South-East Asia ; we are glad to have two new members of this region with their delegates present here.

The S.E.A.M.S. has agreed on the location of a Regional Center for Mathematics in Singapore with support from UNESCO. I am sure that we will do our best to help the mathematical activities of this Center, as well as all good proposals of mathematical activities in other places.

In this respect, I also wish to mention that we would like to propose a new reinforcement of the Exchange Commission under the name of "COMMISSION FOR EXCHANGE AND DEVELOPMENT". It is an important topic already put on the Agenda of this Assembly.

6. OBJECT (d)

Educational activities : Professor S. Iyanaga has been chairman of ICMI and Professor Y. Kawada has been Secretary. We owe great thanks to them for their outstanding leadership, through which ICMI has had a very successful four years.

7. I mentioned at the beginning of this address, the sadness of the Union and in particular of the Executive Committee at Professor Frostman's death. He was in charge of the World Directory of Mathematicians.

Mrs. L. Frostman, to whom we extend our deep sympathy, helped us in collecting all the files and to transfer them to Professor Nagata. Indeed, Professor Nagata has offered to take in charge the new edition of the W.D.M., that will be published in Japan. Many countries have not yet completed and sent the lists and addresses of the mathematicians of their country. We wish to thank very much all countries and all societies - not always members of the Union - that have contributed to this effort. May I ask to all countries that have not yet sent their lists to proceed as soon as possible and forward them to Professor Nagata.

8. The maintenance of the Union's rôle in the international world of science requires adequate funds. We do not need to imitate or compete with international, inter-governmental agencies. But we do need to be self-reliant in the pursuit of our modest aims. One of the important tasks before this Assembly is to look into that question.

We want to thank all members that have made an effort to pay their dues in time, even under some difficult economical situations.

We want also to thank the various institutes where the members of the Executive Committee and the various committees and commissions of the Union are working. No doubt it would be impossible to have the institution of IMU functioning at all were it not for the considerable help (secretarial, mail and telephone, office

expenses, travel expenses) provided by these institutions.

I said that we wanted to increase our efforts towards developing countries. We have asked the help of some countries. You certainly remember that, in Vancouver, our Past President, Professor Chandrasekharan, was able to report that the Italian Research Council had contributed a substantial grant to the IMU Fellowship Fund. We have been able to support through this fund the travel and the local expenses of a young Indian mathematician to Sweden, and we expect to support other candidacies within the near future. I hope that other countries will be able to also contribute to this fund and help in this manner to achieve one of the main goals of our Union.

ANNEXE 4

REPORT OF THE COMMITTEE ON TRAVEL GRANTS TO YOUNG MATHEMATICIANS

The Executive Committee established a fund to facilitate the attendance at the Helsinki Congress of well-qualified young mathematicians from developing countries (not necessarily members of IMU) and from countries where there are severe monetary restrictions. This followed the precedent of the Vancouver Congress. The following Committee was appointed to administer the funds :

Professor J.W.S. Cassels, chairman,
Professor O. Lehto,
Professor J.L. Lions.

The sum of \$ 25,000 was put at the disposal of the Committee. This includes \$ 2,000 from COSTED (Committee on Science and Technology in Developing Countries), \$ 2,000 from UNESCO, and \$ 450 from ICL (International Computers Limited), the remainder coming from IMU. In addition, the Organizing Committee of the Congress agreed to waive the Congress fee for grantees (and also for those to whom the Committee would have wished to make grants if the fund had been larger, should they be able to attend the Congress) and to make available for them a number of comfortable simple rooms at a low price (about \$ 5 per day) ⁽¹⁾. In cash terms, this further support can be valued at \$ 7,500.

⁽¹⁾ It was reported to the General Assembly that this accommodation would in fact be entirely free of charge.

An announcement of the fund was sent to National Adhering Organizations, Regional Coordinators of the Exchange Commission, and to other addresses in developing countries : in particular, S.E.A.M.S (South-East Asian Mathematical Society) and A.M.U. (African Mathematical Union) agreed to make the existence of the Fund known in their regions and to coordinate replies. The announcement is reproduced in the Bulletin of IMU No. 12 (Dec. 1977, p. 7). Following the precedent of COSTED, "young" was interpreted to mean "not more than 35 years old". Nominations were requested by 1 February 1978. It was requested that they be accompanied by brief curricula vitae - and any supporting evidence which it was wished to submit -, and that if several names were put forward they should be in order of priority.

A total of 94 nominations was received, generally of a good quality. The Committee agreed that in making its selection it would take into account both the quality of the candidates and their geographic distribution. In deciding the amount of grants, the Committee took into account the varying distances from Helsinki. It was agreed that the grants would not be at a level to cover total costs, in the expectation that the evidence of IMU sponsorship would assist the grantees in obtaining further support from other sources.

The Committee was unable to give grants to those whom it would have wished to support if unlimited funds had been available. In such cases, the Committee sent a letter explaining the situation and saying that it believed that both the candidate and the Congress would benefit if they could attend : and it is hoped that in some cases this has been of use in obtaining funds from other sources.

The grantees were informed that if they wished the sum would be sent to them in advance, but that otherwise they would be paid in Helsinki ; and most have chosen the second alternative. The overall position is at present as follows :

REGION	NUMBER OF GRANTEES	TOTAL OF GRANTS \$
Europe	22	2,700
Asia	13	10,250
Africa	7	6,650
America	5	4,300
TOTAL : 47		23,900

In conclusion, the Committee feels that it should record its disappointment at the size of the grant from COSTED. Its support is, of course, very welcome, but it falls short of the offer, made on several occasions, to match dollar for dollar the support given by Unions to enable young scientists from developing countries to attend scientific meetings.

ANNEXE 5

LIST OF THE I.M.U. GRANTEES

	<u>COUNTRY</u>	<u>NAMES</u>	<u>AMOUNT OF THE GRANT (US\$)</u>
<u>EUROPE</u> :	HUNGARY	L. Babai	150
		Z. Balogh	150
		M. Marki	150
		A. Szendrei	150
	POLAND	A. Derdzinski	100
		M. Misivrewicz	100
		W. Plesniak	100
		F. Przytycki	100
		S.J. Szarek	100
		P. Wojtaszyk	100
	PORTUGAL	A. Machado	300
	ROMANIA	S. Aizicovici	100
		A. Brezuleanu	100
		A. Bejancu	100
		H. Calin Pop	100
		C. Nita	100
		N. Pavel	100
	TURKEY	Ms. Gökturk	300
	YUGOSLAVIA	Z. Stojakoviz	150
		S. Zdravkovska	150
<u>ASIA</u> :	HONG-KONG	K.P. Mok	750
		M.S. Siu	500
	INDIA	J. Babu	750
		Mrs.Parimala	250
		A. Ramanathan	250
	SOUTH-KOREA	D.P. Chi	1000
	MALAYSIA	P.S. Chee	750

<u>ASIA (continued) :</u>	<u>NAMES</u>	<u>AMOUNT OF THE GRANT (US\$)</u>
REP. OF THE PHILIPPINES	J. Marasiqan	1200
REP. OF SINGAPORE	C.T. Chong	1000
CHINA-TAIWAN	P.Y. Wu	750
THAILAND	M. Tamthai	1000
VIETNAM	N.H.-Anh D.V.-Huynh	1000 + 100 Fmk 1000 + 100 Fmk
 <u>AFRICA :</u>		
ARAB REP. OF EGYPT	M. Imam	800
CAMEROON	S. Touré	500
IVOIRY COAST	S. Iyehen	500
KENYA	B.O. Calleb	1000
MADAGASCAR	P. Rajaona	1250
MORROCCO	M. Akkar	600
NIGERIA	F. Okoh	1000
SUDAN	S.A. Mohammed	1000
 <u>AMERICA :</u>		
COSTA-RICA	O. Acuña-Ortega W. Alvarado	1250 400
CUBA	J. Lopez-Lagomasino	300
PERU	J. Ruiz-Clayessen J. Alcantara	1950 400
VENEZUELA	L. Mendoza	400

ANNEXE 6

BUDGET

The Budget Committee recommends the following budget for each of the years 1979-1982, on the understanding that transfers are permitted from one item to another, and from one year to another, provided that no appropriation from Schedule B is allowed to augment the provision made in Schedule A.

AUTHORIZED ANNUAL EXPENDITURE FOR THE PERIOD 1979-1982 :

SCHEDULE A

1. a) Secretarial help, IMU office	Swiss Francs	11.700
b) Secretarial help, President		1.300
c) I.C.M.I.		900
d) C.T.S.		900
2. Office expenses (incl. postage)		5.200
3. Travel expenses of the E.C.		18.200
4. President's and Secretary's expenses		1.850
5. Contribution to ICSU (2.50% of dues)		2.500
6. Publication & Dissemination of IMU Bulletin		2.600
7. Audit fee		1.000
8. General Assembly 1982		2.600
9. World Directory of Mathematicians		10.000
10. Contingencies		2.500
		<u>61.250</u>

SCHEDULE B

1. Scientific Activities (incl. Symposia and Conferences, IMU Lectures, ICMI, Development and Exchange)	60.000
2. IMU Fellowship Fund	6.000
3. Consultative Committee ICM 1982	4.000
4. IMU Development Fund	10.000
5. Subvention to the ICM 1982	<u>18.750</u>

	98.750
	<u>61.250</u>
<u>INCOME</u>	<u>160.000</u>
	SUM of A and B

1. Membership dues	93.000
2. ICSU Subvention	35.000
3. Sales of World Directory	7.000
4. Special appeal fund	<u>25.000</u>
	<u>160.000</u>

ANNEXE 7

WORLD DIRECTORY OF MATHEMATICIANS ACCOUNT (in US DOLLARS)

<u>YEAR</u>		<u>DEBIT</u>	<u>CREDIT</u>	<u>BALANCE</u>
1975	January 1st	18.901	4.720	14.181 (debit)
	Income		6.002	
	Expenditure	578		
	Interest (private a/c)		46	
1976	January 1st balance	19.479	10.768	8.711 (debit)
	Income		1.293	
	Expenditure	168		
	Interest (private a/c)		208	
1977	January 1st balance	19.647	12.269	7.378
	Income		756	
	Expenditure	289		
	Interest (private a/c)		311	
1978	January 1st balance	19.936	13.336	6.600

ANNEXE 8

RESOLUTIONS

RESOLUTION 1.

The General Assembly wishes to thank the Government of Finland and the Organizing Committee for the great help they provided for the attendance to the Congress of 47 young mathematicians (selected and partially supported by the International Mathematical Union) from developing countries or from countries with severe currency regulations, by waiving fees and by providing free accommodation. The General Assembly hopes that similar actions will be taken by the authorities of the country where the next ICM will take place.

RESOLUTION 2.

The General Assembly recommends the Executive Committee to draw the attention of ICSU and COSTED to the exceptional large attendance attracted by ICM and to the very great efforts made by IMU and the Organizing Committee of the ICM to help young mathematicians from developing countries to attend ICM and to emphasize that under such circumstances much more significant contribution from ICSU to the next ICM (than the one made for Helsinki) would be justified.

RESOLUTION 3.

The General Assembly endorses the view that the ICSU recommendation to consider the introduction of a tax of US \$ 5. on scientific participants at Union congresses and conferences at which a registration fee is charged is against the policy of IMU.

RESOLUTION 4.

The General Assembly does not propose an increase in IMU dues, but proposes a special appeal for contribution to finance development activities, beginning with the allocation of not less than US \$ 20,000 for the quadrennium 1979-1982.

RESOLUTION 5.

The General Assembly resolves that the next General Assembly be called at about the same time and place as the next International Congress of Mathematicians.

RESOLUTION 6.

The General Assembly resolves to establish a "COMMISSION ON DEVELOPMENT AND EXCHANGE" with the following terms of reference :

1. The Commission shall consist of a Chairman, and nine other members (including the Secretary of IMU, ex-officio), elected by the General Assembly of the Union (G.A.) on the nomination of the President of the Union.

2. The Commission shall elect, from among its members, a Secretary who shall act also as its Treasurer, unless the Commission appoints another member for that purpose.

The Chairman, the Secretary (if any) and the Treasurer (if any) shall be designated as Officers of the Commission. The Commission may, in exceptional circumstances, elect the Chairman as Secretary or Treasurer, as the case may be, provided that the Commission has at least two different (elected) officers. The Commission shall make its own financial arrangements, subject to By-law 10 of the IMU.

3. Acting in accordance with the Statutes and By-laws of the Union, and the administrative policies of the Union, as determined by the Executive Committee, the Commission shall :

- (a) support and encourage the growth of Mathematics in developing countries and co-operate with appropriate bodies to that end ;
- (b) support the exchange of visits with member countries of the Union in which, for one reason or another (e.g. non-convertible currencies), such exchanges are not easy to arrange.
- (c) advise and assist existing agencies working towards the same objective with due regard to the non-governmental and non-political nature of IMU and to its administrative policies, and without duplicating or prejudicing the work of other Commissions and Committees of IMU at points of common interest.

4. The Commission may accept gifts, legacies and subventions, subject to Statutes of IMU, Section 16. The Commission shall make its own arrangements for the utilization of such funds for the activities mentioned in (3).

5. The Commission shall report annually to the Executive Committee on its activities and provide a financial statement.

6. The Commission shall file a quadriennial report at each regular meeting of the General Assembly.

This Commission shall come into existence on January 1st, 1979, and the present "Commission on Exchange" shall be dissolved from that date.

RESOLUTION 7.

The General Assembly urges the Executive Committee of the Union to take positive steps towards the adhesion of the Peoples' Republic of China to our Union.

RESOLUTION 8.

The General Assembly approves the financial reports for the years 1974-1977 as printed in the IMU Bulletins.

RESOLUTION 9.

The General Assembly expresses its thanks to Professor B.H. Neumann and to the Australian National University for their help in the production and circulation of the Canberra circulars.

RESOLUTION 10.

The Eighth General Assembly of IMU endorses the resolution of the 15th General Assembly of ICSU on free circulation of scientists, and requests the Executive Committee, elected at this Assembly, to do their best to implement the spirit and the letter of this Resolution, paying special attention to the attendance of invited speakers and other participants at the ICM and other scientific gatherings sponsored by IMU.

The President-elect of IMU is respectfully requested to report to the next General Assembly on this matter.

RESOLUTION 11.

The General Assembly resolves that the Scientific Programme of the 1982 International Congress of Mathematicians (i.e. the invited addresses and the general arrangements of the Programme) be decided upon by a Consultative Committee consisting of nine members. The Executive Committee shall determine the number of members to be appointed by the Organizing Committee of the Congress ; this number shall be at least two and at most four. The remaining members of the Consultative Committee shall be appointed by the Executive Committee, except that its Chairman shall be appointed by the President of the Union.

RESOLUTION 12.

The General Assembly of the International Mathematical Union authorizes the next Executive Committee to study effective ways to further improve the system of selection of invited speakers to the ICM. To this end, the National Committees are invited to send in writing detailed proposals, remarks and comments to the Secretary of the Union, within the next year.

Any recommendations by the Executive Committee resulting from this study shall be submitted for approval to the member countries of the Union.

RESOLUTION 13.

The General Assembly resolves that the recommendation for the location of the 1986 Congress be made by a Committee appointed by the Union and having on it at least two representatives of the Organizing Committee of the 1982 Congress.

WORLD DIRECTORY OF MATHEMATICIANS

Sixth Edition (1979)

To be published under the auspices of the International Mathematical Union,
with the cooperation of the National Committees of Mathematics.

The Directory contains about 20,000 names and addresses of mathematicians from
all over the world.

Previous schedule of the publication was set at the time of 1978 Congress.
But, because of the sudden death of Professor O. Frostman, the publication was
delayed and is expected to be August 1979.

If you are interested in purchasing copies of the Directory, you are advised to
make an advance order by the order-form below.

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