RECORD OF THE SIXTH GENERAL ASSEMBLY

OF THE

INTERNATIONAL MATHEMATICAL UNION

Menton (France), August 28 - 30, 1970

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ICSU = International Council of Scientific Unions

ICMI = International Commission on Mathematical Instuction

I. LIST OF PARTICIPANTS

(a) Executive Committee

President	Professor H. Cartan
Vice-President	Professor M.A. Lavrentiev
Secretary	Professor O. Frostman
Members	Professor M.F. Atiyah
	Professor K. Chandrasekharan
	Professor E. Vesentini
	Professor K. Yosida
Past President	Professor G. de Rham

(b) Delegates:

Australia (II):	Professor B.H. Neumann
	Professor G.R. Morris (alternate:
	Professor J.P.O. Silberstein)
Belgium (III):	Professor L. Godeaux
	Professor F. Bureau
Bulgaria (I):	Professor L. Iliev
Canada (III):	Professor N.S. Mendelsohn
	Professor A.L. Dulmage (alternates:
	Professors H.Heilbronn & J.M.A. Maranda)
	Professor J.J. McNamee
China-Taiwan (I):	Dr. Shih-Chao Liu
Cuba (I):	Professor Margarita Suárez Alonso
Czechoslovakia (III):	Professor J. Novák
	Professor J. Jakubík
Denmark (II):	Professor Th. Bang
	Professor B. Fuglede
East Germany (I):	Professor K. Schröder
Finland (II):	Professor O. Lehto
France (IV):	Professor M. Brelot
	Professor F. Bruhat
	Professor H. Cabannes
Germany (IV):	Professor M. Barner
	Professor W. Klingenberg
	Professor M. Kneser
Greece (I):	Professor D. Kappos

Hungary (III):	Professor P. Turán
	Professor B. Szökefalvi-Nagy
	Professor J. Surányi
India (III):	Professor P.L. Bhatnagar
	Professor M.S. Narasimhan
	Professor U.N. Singh
Ireland (I):	Professor J.R. Timoney
Israel (II):	Professor A. Dvoretzky
Italy (IV):	Professor R. Conti
	Professor D. Graffi
	Professor G. Ricci
	Professor B. Segre
Japan (IV):	Professor K. Yosida
	Professor S. Iyanaga
	Professor T. Kubota
	Professor S.T. Kuroda
Netherlands (III):	Professor H. Freudenthal
	Professor T.A. Springer
New Zealand (I):	Professor J.A. Kalman
Norway (I):	Professor S. Selberg
Poland (IV):	Professor K. Kuratowski
	Professor K. Borsuk
	Professor R. Sikorski
South Africa (I):	Professor H.J. Schutte
Spain (II):	Professor P. Aballanas
Sweden (II):	Professor Å. Pleijel
	Professor T. Genelius
Switzerland (III):	Professor W. Nef
	Professor A. Haefliger
	Professor A. Pfluger
UK (V):	Sir Edward Collingwood
	Professor J.C. Burkill
	Professor R.A. Rankin
	Professor E.A. Maxwell
	Professor A.G. Walker
USA (V):	Professor Ch. B. Morrey Jr.
	Dean A.A. Albert
	Professor N. Jacobson
	Professor W.J. Leveque
	Doctor H.O. Pollak

USSR (V):	Professor M.A. Lavrentiev
	Professor I.N. Vekua
	Professor L.S. Pontrjagin
	Professor Yu.V. Prohorov
	Professor S.V. Jablonsky
Yugoslavia (II)	Professor D. Kurepa
ICMI:	Professor H. Freudenthal
ICSU:	Professor K. Chandrasekharan
UNESCO:	Professor I. Malecki

II: PRESIDENTIAL ADDRESS BY PROFESSOR H: CARTAN

Ladies and Gentlemen,

I declare open the sixth General Assembly of the International Mathematical Union with a most cordial welcome to all the delegates. I am particularly happy to greet here a past President of the Union, Professor Georges de Rham, a past Vice-President, Professor Kuratowski, and a past Secretary, Professor Chandrasekharan. I regret very much that another past President of the Union, Rolf Nevanlinna, who is a delegate of Finland, was unable to come.

UNESCO will be represented at this meeting by Professor Malecki of Poland, who will arrive tomorrow. We hope that ICSU, the International Council of Scientific Unions, will be represented by Mr. Baker; in any case, Professor Chandrasekharan, who is a member of our Executive Committee, is the Secretary-General of ICSU and knows very well the relationship between ICSU and our Union.

Before reporting on the activities of the Union during the past four years, I have the pleasant duty to thank our host in Menton: the "Municipalité" of the City, and particularly Monsieur Francis Palmero, Maire de Menton, Président du Conseil Général des Alpes-Maritimes. He has put at our disposal this hall in the Palais de l' Europe, with all the facilities connected with it. The Secretariat of Menton-Tourisme has helped us in many ways and I want to express, in your name, our thanks to all the people working for us in this building.

The suggestion that this General Assembly of IMU should be held in Menton came from Professor Dieudonné, who has taken care of many practical problems; may I express to him your heartiest thanks?

This year our Union has completed 20 years of existence; it is now firmly established, and its usefulness is clear to everybody. During the last four years we have admitted a new member, New Zealand; the number of members of our Union is now 42.

With the continuous growth of mathematics, the number of working mathematicians in the world is a rapidly increasing function of time, and international exchange in mathematics becomes more and more necessary. The first object of the International Mathematical Union is to promote and encourage scientific activities of an international character. We have sponsored and supported financially international colloquia at Bonn, Bucharest, Santiago de Compostela, Druzba (Bulgaria) in 1967, at Bombay, Warsaw, Aarhus, Jerusalem in 1968 and at Göteborg in 1969. Moreover an international

conference of a new type was held in Tokyo in 1969 and sponsored by the Union; it was a kind of international congress on one large subject (Functional Analysis and related topics), with the contribution of first class speakers from all over the world; it was attended by a large number of Japanese mathematicians, and also by young mathematicians from other countries in South-East Asia. This was made possible by the financial support of the Union for the travel expenses of these young mathematicians and also by the kind hospitality offered to them by the Japanese organizers of the conference. I want to emphasize the importance of this new kind of international meeting in countries far away from Europe or North America, and it is to be hoped that this effort can be continued in the coming years.

I must mention also the conferences organized at Plans-sur-Bex (Switzerland) in 1968, 1969 and 1970 by young mathematicians of neighbouring countries, under the supervision of our colleague Vesentini.

Let me point out that the initiative for all these Colloquia rests with the local organizers. The Union will always welcome such initiatives; but it is necessary that the organizers make an application for a grant to the Executive Committee of the Union at the beginning of the year preceding the year of the meeting. Our Executive Committe will give financial aid suited to the needs and within our possibilities;, moreover it gives scientific aid by nominating two delegates, who take part in the preparation of the programme and in the choice of speakers.

As previously, during the year of the International Congress of Mathematicians, our funds have been reserved for helping the Congress. We have made a grant to the Organizing Committee of the Congress in order to help with the travel expenses of a number of invited speakers. Moreover, we are giving financial support to young mathematicians from various countries to make it possible for them to attend the Congress.

Concerning the preparation of the Congress, we have followed a now well-established procedure, which I hope will continue in the future: a Consultative Committee was in charge of the preparation of the scientific programme of the Congress. This committee was established more than 2 years in advance; it consisted of 4 members nominated by the Executive Committee, 4 members nominated by the French Organizing Committee of the Congress, and a Chairman appointed by the President of the Union. I take the opportunity of thanking all members of this Consultative Committee: Professor Albert (Chairman), Professors Bruhat, Kuiper, Leray, Lions, Mackey, Merguelian, replaced after one year by Jablonsky, Serre and Yosida.

We have set up a Committee to consider the location of the 1974 Congress; this Committee will make a report to the Nice Congress.

Following again a procedure established in the past, we have appointed a Committee for the Fields Medals, whose report will be presented at the Opening Ceremony of the Congress on September 1. In the future, a financial problem could arise in connection with the number of medals; the Executive Committee has considered this question, but has decided that no decision is necessary at the present time.

The problem of collaboration between the international reviewing journals has been considered by the Executive Committee. Our colleague Atiyah has been appointed by the Committee to take charge of this question: a meeting of representatives of the journals will take place during the Nice Congress.

The question whether the Union should publish its own News Bulletin has been considered by the Executive Committee.

Among the permanent commissions of the Union, the International Commission on Mathematical Instruction plays a special and very important role. Professor Freudenthal has been Chairman of ICMI for the last 4 years. He has been very active and has initiated measures that could be fruitful in the coming years. You will hear a report by Professor Freudenthal; I hope he will take this opportunity to express his own views on the problem of teaching mathematics. I thank him cordially for all that he has done.

Our small Exchange Committee, under the Chairmanship of Professor Hirzebruch, has worked very well; you will see the printed report of this Committee in your programme.

The third edition of the World Directory of Mathematicians appeared 4 years ago on the occasion of the Moscow Congress. The Executive Committee has decided to prepare a fourth edition, completely revised and presented in a new form. This new edition is being produced by a Swedish publishing firm which has a good distribution service; we hope this will make for a much larger circulation of the Directory, which should become an essential tool for every mathematical institute in the world. I express special thanks to our Secretary, Professor Frostman, for having taken care of the preparation and the publication of this fourth edition.

Our relations with ICSU and UNESCO are exceptionally good, since Professor Chandrasekharan is Secretary-General of ICSU. We regret that he will very soon be giving up his position. Each year we receive from ICSU-UNESCO a grant which is used only for scientific activities; and this year the grant was substantially increased in view of the international congress. Moreover UNESCO has supported special activities of ICMI. May I take this occasion to express to ICSU and to UNESCO our gratitude for understanding and encouraging our efforts.

In conclusion, and before opening the discussions on the subjects written on the Agenda, may I express the wish that our deliberations will be held in a friendly atmosphere. We must never forget that our first duty is to provide the means for the best development of our science, particularly by encouraging young people or developing countries. I am sure that the good-will of everyone will lead to a successful conclusion of our common work.

III. APPOINTMENT OF COMMITTEES

The President nominated, and the General Assembly approved the appointment of the following Committees:

Credentials Committee:	A.A. Albert (Chairman), M.A. Lavtentiev, O. Frostman
Nominating Committee:	H. Cartan (Chairman), M. Barner, J.C.Burkill, S. Iyanaga, N. Jacobson, M.A. Lavrentiev, B.H. Neuman, Å. Pleijel, G. de Rham, B. Segre, P. Turán
Budget Committee:	Sir E. Collingwood (Chairman), O. Frostman, O. Lehto, Ch.B. Morrey Jr., I.N. Vekua
Committee on Resolutions:	R.A. Rankin (Chairman), F. Bruhat, Yu. V. Prohorov
Tellers:	A. Dvoretzky (Chairman), R. Conti, M. Kneser

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

The Nominating Committee was to receive nominations to the new Executive Committee, from the floor as well as from the present Executive Committee, till 6. p.m. on August 28, 1970, and to present a slate for election on August 29, 1970. The Budget Committee met at 6. p.m. on August 28, 1970.

IV. COMMISSIONS OF THE UNION: REPORTS AND PLANS FOR FUTURE ACTIVITIES

(a) ICMI

A report had been printed together with the Agenda. The President of ICMI, Professor H. Freudenthal referred to this report and gave a brief exposition of its content.

(b) CST (ICSU Committee on Science Teaching)

Professor Chandrasekharan explained shortly about the activities of CST. The Union now adheres to the CST with Professor A. Lichnerowicz as its representative.

(c) Exchange Commission

A report given by the Chairman, Professor F. Hirzebruch, had been printed together with the Agenda. The Executive Committe suggested to The General Assembly that the Exchange Commission should continue its work with Professor Hirzebruch as Chairman, Professor Peter Lax and Doctor A.Zizcenko as members. This was accepted without dissent.

(d)

A proposal was made by Professor McNamee that the General Assembly should ask the Exchange Committee to consider establishing or recognizing regional centres for the exchange of information among the members of the Union and for the promotion of reciprocity arrangments. This was viewed with favour by the Assembly (See Resolution).

(e) Future activities of the Union

The Secretary informed the General Assembly that, during the last two years, grants of about 12.000 dollars had been paid to young mathematicians to assist in their participation in International Conferences and Congresses. Due to the importance of invigorating scientific activities also in the developing countries, the Executive Committee recommended to the General Assembly to increase the allocation for scientific purposes by 50 %.

V. SYMPOSIA : REPORTS

Several Colloquia and Symposia were held under the Union's co-sponsorship during the period under report. Detailed accounts of these have already been presented in the Executive Committee's Annual Reports to the National Adhering Organizations. (See Report of the Executive Committee to the General Assembly)

VI. BUDGET

The Budget Committee recommended and the General Assembly approved the following budget for each of the years 1971-74, on the understending 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 Schedula A.

Schedula A. Authorized annual expenditure for the period 1971-1974.

1.	a) Secretarial help, IMU office	US Dollars 2.750
	b) Secretarial help, President	300
	c) ICMI	300
	d) CST	200
2.	Office expenses (incl. postage)	800
3.	Travel expenses of the EC	4.000
4.	President's and Secretary's expenses	300
5.	Contribution to ICSU (2% of dues)	300
6.	Publication and Dissemination of IMU News	300
7.	Audit fee	100
8.	Contingencies	850
		Totalling 10.200

Schedula B. Authorized annual expenditure for the period 1971-1974.

Scientific activities of the union and its Commissions and Committees (including ICMI, Exchange, Colloquia, Symposia, Conferences, Summer Schools, Lectureships)

VII. RAISING OF ANNUAL DUES

The General Assembly decided to raise the annual dues to US Dollars 130.40 per unit with effect from January 1, 1971.

VIII. RELATIONS WITH ICSU–UNESCO

Professor I. Malecki spoke on behalf of UNESCO and expressed UNESCO's interest in continued support to IMU and to ICMI. Professor K. Chandrasekharan spoke on behalf of ICSU and referred to the increased grant given to IMU by ICSU this year because of the Congress.

IX. CHANGE OF NAMES AND GROUPS OF ADHERENCE

The General Assembly agreed to change the name of "East Germany" to "German Democratic Republic", and of "Germany" to "Federal Republic of Germany", and also agreed to change the group of adherence of the German Democratic Republic from Group I to Group III. A proposal, at this stage, from Professor Schröder that Professor A. Schemmel from G.D.R. be permitted to attend the Assembly as an observer was unanimously adopted.

It was reported from the Executive Committee that Malaya-Singapore did not want to continue as one member in group I of the Union, and that both Malaysia and Singapore would like to postpone their applications for membership.

X. CHANGE OF STATUTES

The Executive Committee recommended and the General Assembly approved the following versions of Statute 17 and By-law 9:

Statute 17 — The Secretary of the Union shall act also as its Treasurer, unless the Executive Committee appoints one of its members at large for that purpose.

By-law 9 — The Secretary is responsible for conducting the ordinary business of the Union and for keeping its records; and he shall act as Treasurer subject to the proviso of Statute 17. At least once every four years the members of the Union shall obtain from the Executive Committee an audit of the accounts.

As a result of these changes the words "by the Secretary" in By-law 12, line 7, have to be deleted.

XI. ELECTIONS

(a) Executive Committee

The following Executive Committee was elected by written ballot for the four-year period beginning January 1, 1971.

President:	Professor K. Chandrasekharan
Vice-Presidents:	Dean A.A. Albert
	Professor L.S. Pontrjagin
Secretary:	Professor O. Frostman
Members:	Professor M.F. Atiyah
	Professor Y. Kawada
	Professor N.H. Kuiper
	Professor M. Nicolescu
	Professor E. Vesentini
Retiring President:	Professor H. Cartan

(b) Commissions: Elections took place with the following results:

ICMI (Ten Members at large):

Professor M.J. Lighthill (President)
Professor M. Barner
Professor F. Châtelet
Professor A. Gleason
Professor L. Lombardo-Radice
Professor Y. Mimura
Professor J. Novák
Professor H. Pollak
Professor S. Sobolev
Professor J. Surányi

The General Assembly decided that the Past President of ICMI, the Secretary of IMU and the representative of the Union on CST should be members ex officio of ICMI.

Exchange Commission:

Professor F. Hirzebruch (Chairman)
Professor P. Lax
Doctor A. Zižčenko

XII. MISCELLANEOUS

1. Professor Morrey raised the question of IMU joining the ICSU Abstracting Board. It was explained that the Executive Committee was trying to co-ordinate the activities of the three Reviewing Journals in Mathematics. Depending on the outcome of these efforts, the question of joining the ICSU Abstracting Board would be considered. It was noted that the Board was itself undergoing changes.

2. The Secretary announced that the 4th edition of the World Directory of Mathematicians would appear in November 1970, and could be bought from the Publishers, Messrs. Almqvist and Wiksell, Stockholm. The General Assembly decided that a free copy should be sent to all National Adhering Organizations.

3. As it was now 20 years since the foundation of the Union the Executive Committee had decided that all participants of the excursion, planned for August 30, should be guests of the Union. The General Assembly appreciated the decision.

XIII. RESOLUTIONS

Resolution 1

The General Assembly discussed proposals put forward by Professor J.J. McNamee (Canada) concerning reciprocal arrangements between mathematical societies in different countries and the setting up of centres of information to assist organizers of symposia. The Assembly refers these to the Executive Committee for consideration.

Resolution 2

The General Assembly approves the request of East Germany to change its name to German Democratic Republic.

Resolution 3

The General Assembly approves the request of Germany to change its name to Federal Republic of Germany.

Resolution 4

The General Assembly approves the change of group of adherence of the German Democratic Republic from Group I to Group III.

Resolution 5

The General Assembly resolves to request the Executive Committee to make known to UNESCO the interest of IMU in the sponsorship of an international centre for mathematics, directed particularly towards benefiting the less advantaged countries of the world.

Resolution 6

The General Assembly notes with satisfaction the high degree of co-operation that has prevailed between the Committees of the Union and the Organizing Committee of the Congress. and the great value inherent in such a co-operative international enterprise.

Resolution 7

It was resolved that the Fields Medal Committee be appointed by the Union, and its decision communicated to the Secretary of the Union who will obtain the medals from Canada, and that only arrangements for the actual presentation be looked after by the Organizing Committee of the Congress.

Resolution 8

It was resolved that the Scientific Programme of the Congress (the invited one-hour and half-hour addresses and the arrangement of the Programme) be decided upon by a Committee appointed by the Union, with 4 representatives of the Organizing Committee of the Congress, 4 representatives of the Executive Committe of the Union and in addition, a Chairman appointed by the President of the Union.

Resolution 9

It was resolved that the recommendation for the location of the 1978 Congress be made by a Committee appointed by the Union and having on it at least 2 representatives of the Organizing Committee of the 1974 Congress.

Resolution 10

It was resolved that the next General Assembly should be called at about the same time and place as the next International Congress of Mathematicians.

REPORT ON THE NICE CONGRESS (1 - 10 September 1970)

The Congress had about 3.000 participants and lasted ten days.

The organization of the scientific programme followed a new principle. No "short communications" were presented orally; instead they were received in advance of the Congress, mimeographed, and distributed to all participants at the beginning of the Congress. The scientific programme consisted, exclusively, of invited lectures. The list of invited speakers was prepared by an international Consultative Committee appointed by the Union.

Invited lectures were of two kinds:

1) Sixteen lectures, of one hour each, of a general character, intended for all members of the Congress, which were given every morning with no other scheduled activities;

2) about 265 specialized lectures of 30 to 50 minutes each, which were given in the afternoon. These were divided into 34 sections. It was noticeable that the audiences here often included non-specialists in the topics lectured on. Obviously any given participant could follow only one in every ten such lectures. All the invited lectures, taken together, were supposed to give a faithful picture of the state of mathematics in 1970.

Speakers were invited from many countries. It was notable, however, that about 125 of them came from the U.S.A., and about 65 to 70 from the U.S.S.R. (about 23 of the speakers invited from the U.S.S.R. could not come).

Outside the official programme, there were many meetings voluntarily organized by individuals, or groups, with facilities placed at their disposal by the Organizing Committee.

The International Mathematical Union has sought to encourage the participation of young mathematicians in the Congress whose names have been recommended by the respective National Adhering Organizations of

the Union. The Union has made a contribution towards the cost of their travel and stay. About 30 young mathematicians received such contributions from the Union.

It was at the opening session of the Congress, presided over by the Minister of National Education of the French Government, that Messrs. Alan Baker, Heisuke Hironaka, and John G. Thompson received the Fields Medals. Mr. Sergei Novikov could not come to Nice to receive the Fields Medal awarded to him.

ALLOCUTION DE HENRI CARTAN, PRESIDENT DE L' UNION MATHEMATIQUE INTERNATIONALE, A LA SEANCE DE CLOTURE DU CONGRES DE NICE

(10 septembre 1970)

Monsieur le Président, Mesdames, Messieurs,

Comme Président sortant de l' Union Mathématique Internationale, j' ai l' agréable devoir d' annoncer que la Sixiéme Assemblée Générale de l' Umion, tenue a Menton les 28 et 29 août 1970, a élu pour une période de quatre ans, commençant le 1er janvier 1971, le nouveau Comité Exécutif que voici:

Président:	Prof. K. Chandrasekharan
Vice-Présidents:	Dean A. Adrian Albert
	Acad. L. Pontrjagin
Secrétaire:	Prof. Otto Frostman
Membres:	Prof. M.F. Atiyah
	Y. Kawada
	N.H. Kuiper
	Acad. M. Nicolescu
	Prof. E. Vesentini

Vous voudrez certainement comme moi-même, souhaiter au nouveau Comité Exécutif un plein succes dans les tâches qui l' attendent. L' Union Mathématique Internationale s' efforcera, comme par le passé, j' en suis sur, de prendre toutes les initiatives pouvant favoriser la coopération active et amicale entre les mathématiciens du monde entier, ou contribuer au développement des mathématiques dans les pays moins favorisés.

Je me réjouis que ce Congrès ait permis de réunir à Nice de nombreuses délégations de presque tous les pays où l' on cultive les mathématiques. La participation de certains d' entre eux aurait été souhaitée plus complète encore; j' exprime le voeu qu' elle le soit lors du prochain Congrès de 1974.

Au nom du Comité qui a été désigné pour étudier le lieu du Congres de 1974, je prie le Président Leray de bien vouloir donner la parole au Professeur Heilbronn, qui va parler au nom de la Société Mathématique du Canada.

(Ensuite, Heilbronn a pris la parole à la fois au nom de la Société mathématique du Canada ("Canadian Mathematical Congress") et de l' University of British Columbia de Vancouver. Il a invité le Congres de 1974 a se tenir à Vancouver; cette proposition a été acceptée par acclamations.

INTERNATIONAL CONGRESS OF MATHEMATICIANS 1974

The next International Congress of Mathematicisns will be held at Vancouver, in Canada, on August 21 - 28, 1974.