# IMU <br> bulletin <br> OF THE 

# INTERNATIONAL MATHEMATICAL UNION 

No. 6 December 1973

## Secretariat

Box 41
S-18251 Djursholm
SWEDEN

## INTERNATIONAL MATHEMATICAL UNION

## Executive Committee

(1 January 1971-31 December 1974)

| President: | Professor K. Chandrasekharan |
| :--- | :--- |
| Vice-Presidents: | Professor Nathan Jacobson |
| Secretary: | Academician L.S. Pontrjagin |
| Members: | Professor Otto Frostman |
|  | Professor M.F. Atiyah |
|  | Professor Y. Kawada |
|  | Professor N.H. Kuiper |
|  | Academician M. Nicolescu |
| Past President: | Professor E. Vesentini |
|  | Professor H. Cartan |

## MEMBER COUNTRIES OF THE

## INTERNATIONAL MATHEMATICAL UNION

The list of names and addresses below is the result of inquiries made during the last three years. The list is not quite complete, and in some cases only the name of the National Adhering Organization or the Chairman of the National Committee for Mathematics is given. There may be some errors, both as to names and addresses, and the Members are requested to send corrections to the Secretariat.

| Name | Group | National Adhering Organization (NAO) |  |
| :---: | :---: | :---: | :---: |
|  |  | National | Committee for Mathematics (NC) |
| Argentina | 1 | NAO: | Union Matemática Argentina |
|  |  |  | Casilla de Correo 3588 |
|  |  |  | Buenos Aires |
|  |  | dues to: | Dra. Susana E. Trione, Tesorera, Union Matemática Argentina address as above |
|  |  | NC: | Prof. Alberto González Domínguez (Chairman), address as above |
| Australia | 111 | NAO: | Australian Academy of Sciences |
|  |  |  | Civic Square |
|  |  |  | POB 216 |
|  |  |  | Canberra, ACT 2608 |
|  |  | NC: | Prof. B.H. Neumann (Chairman) |
|  |  |  | Department of Mathematics |
|  |  |  | Institute of Advanced Studies |
|  |  |  | Australian National University |
|  |  |  | POB 4 |
|  |  |  | Canberra, ACT 2600 |
| Austria | 11 | NAO: | Österreichische Mathematische |
|  |  |  | Gesellschaft, Sekretariat: |
|  |  |  | Technische Hochschule |
|  |  |  | Karlsplatz 13 |
|  |  |  | A-1040 Wien |
|  |  | NC: | Prof.Dr. Edmund Hlawka (Chairman) |
|  |  |  | Math. Inst. der Universität Wien |
|  |  |  | Strudlhofgasse 4 |
|  |  |  | A-1090 Wien |


| Belgium | 111 | NAO: | Académie Royale de Belgique <br> Palais des Académies <br> 1, rue Ducale <br> B-1000 Bruxelles <br> Le Chef du Secrétariat <br> Mme L. Nicolas <br> address as above |
| :---: | :---: | :---: | :---: |
|  |  | NC: | Prof. Lucien Godeaux (Chairman) quai Orban, 37 <br> B-4000 Liège |
|  |  |  | Prof. F. Bureau (Secretary) <br> place d'Italie, 5 <br> B-4000 Liège |
| Brazil | 1 | NAO: | Sociedade Brasileira de Matemática <br> Rua Luiz de Camoes, 68 <br> 20000 Rio de Janeiro, GB ZC-58 |
|  |  | NC: | Prof. Manfredo Perdigaõ do Carmo (Chairman) Sociedade Brasileira de Matemática, address as above |
| Bulgaria | 11 | NAO: | Bulgarian Academy of Sciences 7th November str. 1 <br> Sofia |
|  |  | NC: | Prof. L. Iliev (Chairman) <br> Bulgarian Academy of Sciences <br> address as above |
| Canada | 111 | NAO: | Canadian Mathematical Congress 3421 Drummond, Suite 15 Montreal 109 |
|  |  |  | Executive Director: J.J. McNamee |
|  |  | NC: | Prof. A.J. Coleman (Chairman) Queen's University Kingston, Ontario |
| China-Taiwan | 1 | NAO: | The Mathematical Society of the Republic of China Mathematics Research Center National Taiwan University Taipei |


|  |  | NC: | Prof. Shien-siu Shu (Chairman) National Tsinghua University Hsinchu |
| :---: | :---: | :---: | :---: |
|  |  |  | Prof. Lung-chi Miao (Secretary) Department of Mathematics National Taiwan University Taipei |
| Cuba | 1 | NAO: | Escuela de Matemática Universidad de La Habana Habana 6, La Habana |
|  |  |  | Director: Francisco Guerra Vázquez |
| Czechoslovakia | III | NAO: | Czechoslovak Academy of Sciences <br> Institute of Mathematics <br> Zitná ul. 25 <br> CS-115 67 Prague 1 |
|  |  | NC: | Prof. Dr. J. Novák (Chairman) address as above |
| Denmark | 11 | NAO: | Det Kongelige Danske Videnskabernes Selskab Dantes Plads DK-1556 Copenhagen V |
|  |  | NC: | Prof. Emer. N.E. Nørlund (Chairman) <br> Malmøgade 6 <br> DK-2100 Copenhagen $\varnothing$ |
| Federal Republic of Germany | IV | NAO: | Deutsche Mathematiker-Vereinigung E.V. Mathematisches Institut der Universität D-78 Freiburg, Hebelstrasse 29 |
|  |  | NC: <br> dues to: | Prof. Dr. M. Barner <br> address as above Frau Hertha Schleiff D-1 Berlin 44, Innstrasse 3 |
| Finland | 11 | NC: | Prof. Olli Lehto (Chairman) <br> University of Helsinki <br> Department of Mathematics, <br> Heimola <br> Helsinki |


| France | IV | NAO: | Académie des Sciences <br> 23 quai de Conti <br> F-75006 Paris |
| :---: | :---: | :---: | :---: |
|  |  | NC: | Prof. Jean Leray (Chairman) 11 rue Pierre et Marie Curie F-75005 Paris |
| German Democratic Republic | 111 | NAO: | Akademie der Wissenschaften der DDR Otto-Nuschke-Strasse 22/23 DDR 108 Berlin |
| Great Britain | V | NAO: dues to: | The Royal Society 6 Carlton House Terrace London, SW1Y 5AG The Executive Secretary |
|  |  | NC: | Prof. C.A. Rogers (Chairman) <br> Department of Mathematics <br> University College <br> Gower Street <br> London, WC1E 6BT |
| Greece | 1 | NAO: | Academy of Athens 14 Anagnostopoulou Street Athens (136) |
|  |  | NC: | Prof.Dr. J. Xanthakis (Chairman) address as above |
| Hungary | III | NAO: | Bolyai János Matematikai Társulat <br> Szabadság-tér 17 <br> Budapest V |
|  |  | NC: | Prof. Béla Szökefalvi-Nagy (Chairman) Aradi vértanuk tere 1 <br> H-6720 Szeged |
| Iceland | 1 | NAO: | The Icelandic Mathematical Society Raunvísindastofnun Háskơlans Dunhaga 3 Reykjavik |
|  |  | NC: | Dr. Thorkell Helgason (Chairman) <br> Science Institute <br> Dunhaga 3 <br> Reykjavik |


| India | III | NAO: <br> dues to: <br> NC: | Indian National Science Academy <br> Bahadur Shah Zafar Marg <br> New Delhi 1 <br> The Executive Secretary <br> Dr. C.R. Rao (Chairman) <br> Director, Research Training Centre <br> Indian Statistical Institute <br> 538, Yojana Bhavan, Parliament Street <br> New Delhi 1 |
| :---: | :---: | :---: | :---: |
| Ireland | 1 | NAO: | Royal Irish Academy 19 Dawson Street Dublin 2 |
|  |  | NC: | Prof. C. Lanczos (Chairman) Dublin Institute for Advanced Studies 10 Burlington Road Dublin 4 |
|  |  |  | Prof. B.H. Murdoch (Secretary) <br> Trinity College Dublin 2 |
| \|srael | 11 | NAO: | The Israel Academy of Sciences and Humanities $\text { POB } 4040$ <br> Jerusalem |
|  |  | NC: | Prof. Harley Flanders (Chairman) <br> Department of Mathematics <br> Tel-Aviv University <br> Tel-Aviv |
| Italy | IV | NAO: | Consiglio Nazionale delle Ricerche Piazzale delle Scienze 7 <br> I-00185 Rome |
|  |  | NC: | Prof. Carlo Pucci (Chairman) <br> Comitato Nazionale per le Scienze <br> Matematiche <br> Via S. Marta 13/A <br> I-50139 Firenze |


| Japan | IV * | NAO: | Science Council of Japan 22-34 Roppongi 7 chome Minato-ku, Tokyo, 106 |
| :---: | :---: | :---: | :---: |
|  |  | NC: | Prof. Masuo Hukuhara (Chairman) Tsuda-Juku Women's College Tokyo |
|  |  |  | Prof. Yukiyosi Kawada (Secretary) <br> Department of Mathematics, <br> Faculty of Science <br> University of Tokyo <br> Hongo, Tokyo, 113 |
| Mexico ** | 1 | NAO: | Sociedad Matemática Mexicana <br> Tacuba 5 <br> Mexico 1, D.F. |
| Netherlands | III | NAO: | Wiskundig Genootschap Drs. R. Sattler (Secretary) <br> Department of Mathematics <br> Technische Hogeschool <br> Julianalaan 132 <br> Delft |
|  |  | NC: | Prof. Dr. W. Peremans (Chairman) <br> Department of Mathematics <br> Postbox 513 <br> Eindhofen |
|  |  |  | Drs. R. Sattler (Secretary) address as above |
| New Zealand | 1 | NAO: | The Royal Society of New Zealand P.O. Box 12249 Wellington |
|  |  | NC: | Mr. D.C. Harvie (Chairman) <br> Department of Mathematics <br> Victoria University of Wellington <br> P.O. Box 196 <br> Wellington |

* Group V as from January 1, 1974
** No reply received to questionnaire

| Nigeria * | I | NAO: | Mathematical Association of Nigeria <br> Department of Mathematics University of Nigeria Nsukka Campus, Nsukka |
| :---: | :---: | :---: | :---: |
|  |  | NC: | Prof. J.O.C. Ezeilo (Chairman) address as above |
|  |  |  | Dr. J.N. Adichie (Secretary) address as above |
| North Korea | 1 | NAO: | Academy of Sciences of the D.P.R. of Korea Pyongyang |
|  |  | NC: | Prof. Han Heun Kun <br> Academy of Science of the D.P.R. <br> of Korea <br> Institute of Mathematics and Physics <br> Pyongyang |
| Norway | 1 | NAO: | Det Norske Videnskaps-Akademi i Osio Drammensveien 78 <br> Oslo 2 |
|  |  | NC: | Dos. Olav Arnfinn Laudal (Chairman) <br> Department of Mathematics <br> University of Oslo <br> Box 1053, Blindern <br> Oslo 3 |
| Pakistan ** | 11 | NC: | Prof. M.A. Rashid (Head of the Dept. of Math.) University of Islamabad Post Box 1090 Islamabad |
| Poland | IV | NAO: | Polskiej Akademii Nauk Instytut Matematyczny ul. Sniadeckich 8 Skrytka pocztowa 137 Warzawa 1 |

* Membership as from January 1, 1974, subject to approval
** No reply received to questionnaire.

|  |  | NC: | Prof. Kazimierz Kuratowski (Chairman) address as above |
| :---: | :---: | :---: | :---: |
| Portugal | 1 | NAO: | Academia das Ciências de Lisboa Rua da Academia das Ciềncias 19 Lisboa 2 |
| Rumania | 11 | NAO: | Academia Republicii Populare Romine Calea Victoriei 125 <br> Bucharest |
|  |  | NC: | Prof. Gr. C. Moisil (Chairman) <br> Institutul de Matematicǎ <br> Calea Grivitei 21 <br> Bucharest |
| South Africa | 1 | NAO: | S.A. Council for Scientific and Industrial Research Science Cooperation Division P.O. Box 395 Pretoria |
|  |  | NC: | Prof. H.J. Schutte (Chairman) <br> Department of Mathematics <br> P.O. Box 94 <br> Grahamstown, Cape Province <br> Mr. P. le R. Malherbe (Secretary) <br> S.A. Council for Scient.and Ind.Research <br> address as above |
| Spain | 11 | NAO: | Consejo Superior de Investigaciones <br> Cientificas <br> Serrano 117 <br> Madrid 6 |
|  |  | NC: | Prof. Pedro Abellanas (Chairman) <br> Instituto de Matemáticas <br> "Jorge Juan" <br> Serrano 123 <br> Madrid 6 |
| Sweden | III | NAO: | Kungliga Vetenskapsakademien <br> S- 10405 Stockholm 50 |

NC: Prof. Åke Pleijel (Chairman)
Department of Mathematics
University of Uppsala
Sysslomansgatan 8
S- 75223 Uppsala
Prof. Tord Ganelius (Secretary)
Department of Mathematics
University of Gothenburg
S- 40220 Gothenburg 5

\begin{tabular}{|c|c|c|c|}
\hline Switzerland \& 111 \& NAO:

$N C:$ \& | Société Helvétique des Sciences Naturelles |
| :--- |
| Musée d'Histoire Naturelle |
| Route Malagnou |
| $\mathrm{CH}-1211$ Genève 6 |
| Prof. E. Specker (Chairman) |
| Eidg. Techn. Hochschule |
| Leonhardstrasse 33 |
| CH-8006 Zürich |
| Prof. H. Kleisli (Secretary) |
| Institut de Mathématiques |
| Université de Fribourg |
| CH-1700 Fribourg/Perolles | <br>

\hline Turkey \& 1 \& NAO: \& Turkish Association for Pure and Applied Mathematics Fen Fakültesi, Matematik Enstitüsü Vezneciler/Istanbul <br>
\hline \& \& NC: \& Prof. Dr. Nazim Terzioğlu (Chairman) address as above <br>

\hline USA \& V \& | NAO: |
| :--- |
| dues to: | \& | National Academy of Sciences |
| :--- |
| National Research Council |
| Division of Mathematical Sciences |
| 2101 Constitution Avenue |
| Washington DC 20418 |
| Office of the Foreign Secretary |
| attn.: Mrs. Kathleen Behr |
| address as above | <br>


\hline \& \& NC: \& | Dr. George D. Mostow (Chairman) |
| :--- |
| Department of Mathematics |
| Yale University |
| New Haven, Connecticut 06520 | <br>

\hline
\end{tabular}



## NEWS AND ANNOUNCEMENTS

## General Committee of ICSU

The Next General Assembly of ICSU will be held in Turkey, from 23 to 26 September 1974.

Professor T. Caspersson of the Karolinska Institutet, Stockholm has been appointed Chairman of the Standing Committee of ICSU on the Free Circulation of Scientists.

Professor V. Kovda has been elected President of SCOPE (Special Committe of ICSU on Problems of the Environment).

The General Committee of ICSU meeting in Leningrad on 19-21 September adopted, among others, the following resolutions:

## 1. Fundamental Research

Being aware of the importance of fundamental scientific research for the solution of environmental problems;

Being further aware of the importance of such research for the cultural and economic progress of developing countries;

Asks the ICSU scientific organizations to make due mention of i) fundamental research as a general basis for future applications of science in their reports to ICSU as well as ii) their contribution to the furtherance of scientific research in developing countries.

## 2. Registration Fees

Recommends that for international symposia, congresses and other meetings sponsored by members of the ICSU family the registration fee, that is the right to attend the meeting, should not exceed US $\$ 30$;

Recommends further that under no circumstances should it exceed US $\$ 50$.

## 3. Coordination of Scientific Meetings

Wishing to avoid, when possible, unnecessary duplication in scientific meetings organized by the scientific organizations in ICSU;

Requests that all members of the ICSU family send information on symposia and colloquia under consideration to the ICSU Secretariat; and

Asks the ICSU Secretariat to distribute such information among members of the ICSU family as early as possible.
4. Reports of ICSU"s Adhering Scientific Organizations

Noting that the actual Reports of the scientific bodies often pay too little attention to scientific research as compared to administrative matters;

Wishing to be informed in sufficient detail about the large scientific projects being undertaken by the scientific organizations in ICSU;

Urges these organizations to report adequately on such projects in their Reports to ICSU, in particular drawing attention to the scientific significance and scope of the projects, their estimated time-scale, development and expected termination date, and other information such as the degree of international and interdisciplinary involvment.

## 5. News Letters

Noting the need to inform individual scientists about the activities of ICSU;
Recommends that the Newsletters and similar publications of the members of the ICSU family should in the future publish items of news concerning activities of other members which might be of interest to the readers;

Requests the Unions, Committees, Commissions and Permanent Services to transmit items of information several times a year to the Editors of the Newsletters of other bodies whose members might be interested. Such items should include an address from which additional information can be obtained. The ICSU Secretariat is available to act as a clearing house for these items of information if required.

## 6. Relations with other Organizations

In view of the progressive increase in the interdisciplinary character of scientific research and the proliferation, outside the ICSU family, of international organizations concerned with specific scientific topics;

Recommends that:
i) the Secretary General invite the Scientific Unions to examine their programmes with the object of exposing those of possible interdisciplinary character and to take the initiative in establishing appropriate inter-union liaison at the working level;
ii) in each Union, formal liaison should be actively promoted, by association or affiliation, with non-ICSU bodies whose interests are closely related to its own so that conflicts of interest can be avoided, and that the ICSU Secretariat be kept informed of these actions.

## GENERAL ASSEMBLY OF IMU.

First Communication.
To All National Adhering Organizations of
the International Mathematical Union

1. Place and Date of Assembly

The Seventh General Assembly of the International Mathematical Union will be held at Harrison Hot Springs, a resort town near Vancouver, British Columbia, Canada, on August 17-19, 1974, immediately before the International Congress of Mathematicians in Vancouver, August 21-29, 1974. The actual meetings of the Assembly will take place at The Harrison Hotel.

## 2. Delegations and their voting strength

According to the Statutes of the Union, each National Adhering Organization "shall appoint and certify to the Secretary of the Union a delegation which shall have the number of votes corresponding to the Group in which it adheres, as follows:

| Group | I | II | III | IV | V |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Number of votes | 1 | 2 | 3 | 4 | 5 |

provided that the number of delegates shall not exceed the corresponding number of votes. Any National Adhering Organization which desires to ensure its full quota of representatives at meetings of the General Assembly by the appointment of alternates for its regularly named delegates may do so, provided that no such alternate shall be permitted to participate in the
work of the General Assembly until he has been duly certified to the Secretary of the Union as assuming the powers and duties of the delegate he has been designated to replace. No person shall be a member of the delegation of more than one country. Voting by the General Assembly shall be by delegations, provided that each delegation shall be free to cast the votes to which it is entitled either as a unit or divided in such a manner as it may determine."

## 3. Delegates and Alternates and their participation

It follows from the above extract from the Statutes that
a) the number of regular delegates from a member-country cannot exceed the number of its votes (it can, of course, be smaller);
b) the number of alternates cannot exceed the number of regularly named delegates (there may, of course, be no alternates at all);
c) at any given session of the General Assembly, the total number of delegates, either regular of alternate, representing a member-country, cannot exceed the number of votes of that member-country;
d) and that the alternate delegates are permitted to participate in the work of the Assembly only after due notification to the Secretary.

## 4. Appointment of Delegations

You are hereby requested to designate the delegation of your country. The names of your delegates, with alternates, if any, together with their addresses, may please be entered on the accompanying blank, and returned, so as to reach the undersigned not later than March 1, 1974. This dead-line is important, since some of the delegates will be proposed for election to various Committees of the Assembly at the opening session.

Delegates should arrange their own stay at Harrison Hot Springs; further information will be given in the Second Communication. They are advised to reach Harrison Hot Springs the day before the opening of the General Assembly.

## 5. Proposals for Agenda

As provided for in the By-Laws of the Union, National Adhering Organizations may propose business to be transacted at the General Assembly; such proposals shall reach the undersigned at least four months before the meeting, i.e. not later than April 19, 1974. Since the Executive Committee is to meet in the first half of March, 1974, to prepare the Agenda of the General Assembly, it is advisable that such proposals (if any) are sent in so as to reach the undersigned not later than February 28, 1974.

## 6. Election of the new Executive Committee

The present Executive Committee of the Union is now about to prepare its recommendation to the next General Assembly regarding the composition of the new Executive Committee for the term January 1, 1975, to December 31,1978 . As in the past, the present Committee would like to receive suggestions from National Committees regarding the composition of the new Executive Committee, including its officers; in particular, regarding the representation of the member-countries in the Committee. It should be understood that, while the present Executive Committee would give such suggestions due consideration in arriving at its own recommendation, it would in no sense be bound by such suggestions. To be so bound would, in fact, amount to an abdication of its own responsibility, which no member of the Union desired.

Suggestions from National Committees should reach the undersigned not later than February 15, 1974. The Executive Committee would like it to be clearly understood that no member of the Committee is elected to represent his country; he is elected on his own merits, and is expected to serve the whole community of mathematicians which the Union represents.

## 7. Agenda

The Agenda of the meeting will be sent later. An item which the General Assembly has to consider, in any case, is the question of annual dues of members. The unit of annual subscription was fixed by the Sixth General Assembly at Menton in 1970 at US dollars 130.40. The relationship between the intended and actual value of the unit, and the need to finance the expanding scientific activities of the Union are matters to be considered by the General Assembly.
8. ICMI

According to the terms of reference of ICMI (International Commission on Mathematical Instruction) approved by the 4th General Assembly, in 1962, the General Assembly of IMU elects ten members-at-large of ICMI on the nomination of the President of IMU. It also elects the President of ICMI on the nomination of the President of IMU. On the other hand, any National Adhering Organization wishing to support or encourage the work of ICMI may create, or recognize, in agreement with its National Committee, a National subcommission for ICMI to maintain liaison with the Commission in all matters pertinent to its affairs. The National Adhering Organization in question shall designate one member of the said subcommission, to serve as a delegated member of ICMI.

Each National Adhering Organization is hereby requested to give the undersigned, not later than February 28, 1974,
(1) the name of the national delegate which it designates to serve as a member of ICMI for the term January 1, 1975 to December 31, 1978, with a copy addressed to the Secretary of ICMI, Dr. E.A. Maxwell, 15 Gilbert Road, Cambridge, England
and
(2) the names of possible candidates for election as members-at-large, for the term 1975-78.

Otto Frostman
Secretary of IMU

## INTERNATIONAL CONGRESS OF MATHEMATICIANS IN VANCOUVER

 Travel grants.To All National Adhering Organizations of the International Mathematical Union

The next International Congress of Mathematicians will be held in Vancouver, Canada, August 21-29, 1974. In order to facilitate the participation of qualified young mathematicians, not invited as speakers, the International Mathematical Union, aided by a subvention from the International Council of Scientific Unions (ICSU) and UNESCO, has allocated $\$ 8000$ to be used as travel grants. In the first place, this sum is reserved for help to young mathematicians from developing countries (not necessarily members of IMU). But deserving cases from countries where severe money regulations exist will also be considered.

You are hereby requested to send applications with names and addresses of young mathematicians from your country who are qualified and who will need financial help to be able to participate in the International Congress of Mathematicians in Vancouver.

The Executive Committee would like to have at least a preliminary list of applicants, with priorities indicated, not later than March 1, 1974 but completions made before the end of April will also be considered. Thus, all applications should be received by the undersigned not later than May 1, 1974.

Otto Frostman
Secretary of IMU

