E.M.S. : Why and How
Jean-Pierre Bourguignon
President of the European Mathematical Society

I am happy to inaugurate this new column of the Newsletter, and thus to be given the opportunity of presenting the way in which the EMS is developing. This occasion gives me the pleasure of thanking Professor Martin Spiller, and the new team of the Newsletter from Glasgow Caledonian University, for all the work done, and for their willingness to adopt a new format in spite of the extra work involved.

Born only 8 years ago, the EMS is still a young society. This is at the same time a strength and a weakness. It means that, within the EMS, new initiatives can be easily developed without being obstructed by long established bad habits, and at the same time that the guiding principles inherited from a long tradition may be missed when important decisions are to be taken. In more concrete terms: its being a new structure should help convince colleagues that the EMS can address questions of common interest not tackled so far; on the other side of the coin, too many colleagues have not even heard of the EMS.

It is therefore of paramount importance to review now why the European Mathematical Society should exist, and how its present structure allows it to meet the challenges that brought it into being.

Why a European Mathematical Society?
The central mission of the EMS is to help the emergence of an identity among European mathematicians. This parallels the steady trend that has been reshaping the life of all European societies since the end of World War II, and is bringing European nations closer. We are witnessing the construction of a European scene in all facets of social activity, and this process takes many different forms. The European Union is gaining weight year after year, and its influence is growing, not only in countries which already belong to it, but also in those which aspire to join it. For mathematicians, a professional society appeared as the most appropriate structure to allow debate on those perspectives, to promote Mathematics and to represent the community with the newly established structures, and also to help our discipline meet the challenges that it faces around the world.

Nowadays, Society puts much tougher questions to scientists in general, and to mathematicians in particular. We must come to grips with these demands, without harming the long-term development of our discipline. Short-term views are almost surely harmful, and we have to argue for the preservation of free thinking, precisely in order to be in a good position to answer the pressing questions of tomorrow. Mathematics has a much longer timeframe than other sciences.

The need for a structure bringing together mathematicians on the European level has another root. I strongly feel that it is only by doing things together that we can really learn from each other, and measure the richness and the complexity that diversity brings to human actions. Indeed Europe is diverse, culturally, linguistically, structurally, some of its countries have a long tradition of large central organizations, others cherish county or village structures. For me, this is an advantage, and it is to be preserved. The key word is compatibility, not uniformization.

By working together, we will not only acquire some new ways of doing things, but we should be able to address certain questions at the critical level. The basis of modern society is communication and networking. On this front too, the EMS is the appropriate structure for action. It is light enough to move quickly when necessary, decentralized enough to catch information where and when it is useful. It is evident that the EMS needs a large membership and the active involvement of its member societies. It should be made easy for them to work with the EMS. They should find there their visibility for their endeavors of wider interest than their normal constituency, and support for some of their actions that naturally have a European dimension. The EMS has to develop its actions at a level which, without ambiguity, must be different from that of its member societies. It also relies on them to relay some of its activities, typically those which imply collecting information in various countries or regions.

If all possible national or regional societies in Europe have now joined the EMS, a lot remains to be done to attract individual members, the most serious problem being to overcome economic obstacles for colleagues from less favored regions. However, we recently succeeded in introducing the possibility for colleagues who act as referees for the Zentralblatt für Mathematik to pay their fee through their royalties.

Another front on which mathematicians are involved the world around is education. If students are to circulate easily in the European job market,
the various education systems have to be put in phase, again while preserving the diversity that is perhaps one of the main resources that Europe has to offer. Mathematics is likely to play an important role in these discussions as its teaching is often controversial. A structure representing the mathematical community for discussions on these questions is certainly important since we do not want closed lobbies to gain control over such issues.

A final important point: EMS does provide a good framework for the development of Mathematics in its unity. Let us remember that this was the motto adopted by the Scientific Committee of the last European Mathematics Congress in Budapest. The speakers selected provided a vivid illustration of the rightness of this choice. Pure and applied mathematicians have to feel equally at home in the EMS, and it should keep this in mind in all its actions and developments. This is a must if one is to properly address many questions having to do with the training of students, relations with society and with executives from the private sector as well as from public organizations.

How the European Mathematical Society?

In order to fulfill its objectives the EMS has set up a number of tools and is pursuing actions on several fronts. Let me quickly describe them, taking this opportunity to remind you in what perspective they were set, and in which direction we try to develop them further.

The EMS Newsletter is of course the natural link between members, and the new series inaugurated in this issue aims at improving contacts. Each issue will contain regular columns: an editorial by a person who holds a post of responsibility in the EMS, an interview with a prominent scientist or industrialist, the presentation of a special institute. We also hope that this renewed content will generate an interesting debate with our readers that will be made available to everybody through a lively Readers Column.

EMS, the EMS server which is the child of the present EMS Secretary, Peter Michor, and was developed by Michael Jost, from the FIZ-Berlin office, is a great success. It now plays a very important role, not only by the large amount of information that it displays but also by the example it sets on a number of fronts. Of course, like any well built server, it provides links to the world to which it belongs, namely that of mathematicians, and information on the institution that put it up, the EMS. Beyond that, it offers numerous services, such as Euro-Math-Job, a link to available jobs (that we hope to transform into a real job placement service), MATH-Zentralblatt für Mathematik, the electronic bibliographic data basis, Elib-Math, the electronic library which now contains 23 journals (and 10 more soon to come), 7 proceedings of conferences, and 1 monograph. On EMIS will soon be available the Current Awareness Programme, which will enable any mathematician to have access, free of charge, to a large number of abstracts of articles that have appeared in the last year. Résumées from the Annales de l’Institut Fourier and of publications of the Société Mathématique de France are already automatically loaded in CAP.

Very early, it was decided by the Executive Committee to found JEMS, the Journal of the EMS. This is just one of the directions in which the EMS is developing its publication policy. It is the responsibility of the EMS Publications Officer, formerly Stuart Robertson from Southhampton, who was also the animator of the previous Newsletter team, and now Carles Casacuberta, from Barcelona. JEMS now has reached a critical stage: the Editor-in-Chief, Jürgen Jost, one of the directors of the newly founded Max-Planck-Institut für Mathematik in den Naturwissenschaften based in Leipzig, has started to work, in close connection with the main editors, Luigi Ambrosio (Pavia), Gérard Ben Arous (EPFL, Lausanne), John Coates (Cambridge), Helmut Hofer (Courant Institute) and Alexander Merkurjev (UCLA). The editorial board is being completed by about 30 associate editors. The first issue is due in January 1999, and the journal is to be presented at the International Congress of Mathematicians in Berlin next August.

The most visible manifestations that the EMS has been involved in are the European Congresses of Mathematics. Paris and Budapest hosted these events in 1992 and 1996 respectively, and Barcelona will host ECM2000. There too, the EMS is innovating by implementing a broader format than the traditional ICMs. Besides the scientific programme, round tables provide forums for discussion on a number of issues of common interest to European mathematicians. Some are organizational (such the circulation of persons between institutions in Europe), others are about foreseeing the future by gathering and disseminating information about the demography of mathematicians, ...

A number of initiatives taken by the EMS address young mathematicians. EMS Prizes are given at the ECMs to 10 young mathematicians. Each year, two EMS Summer schools are organized, one in pure Mathematics, the other on more applied topics. Applications for the organization of summer schools are called for and studied by the Summer Schools Committee, chaired by Professor Giovanni Monegato. The EMS makes a great effort to have
these schools held in Eastern European countries to help colleagues from these countries develop their activities. We have a good record as far as our applications for support from the European Commission are concerned. Special funds have to be found for schools held in Central and Eastern Europe. The UNESCO Venice office has so far shown great interest in a partnership in this.

The Diderot Mathematical Forum series was set up with the explicit aim of opening up contacts with other scientists and other components of Society. The scheme, a 2-day conference held simultaneously in 3 different cities linked for part of the manifestaton by audio-visual means, aims at maximizing the confrontation between different points of view and sensibilities while keeping the local organization light, since at each node only about 100 people are expected. It is true that putting up the telecommunication part turned out to be a non-trivial task. We may just be a bit ahead of our time. Topics treated so far are "Mathematics and Finance", "Mathematics and Environment: problems connected to water"; the ones which are in the making deal with "Mathematics as a leverage for cultural evolution", "Mathematics and Music" (these two are by now well defined), "Mathematics and Telecommunications: problems connected to mobile telephones", "Mathematics and Risks", "Mathematics and Medicine". For this again, your input is crucial, both for topics, potential partners and locations. For me showing the willingness of the mathematical community to discuss issues in which Mathematics is concerned both at the fundamental and at the applied levels is crucial. The hope is to make the series a major tool for renovating the image of Mathematics with a broad public in mind, and to call the attention of our colleagues on the breadth of possible interactions of our discipline.

This series complements other activities such as the EMS Lectures which are geared towards our community, and have twice already functioned successfully. The scheme is to support a series of lectures by an outstanding scientist in a not too large institution with the obligation of making the course readily available to a wider audience than the local one. The University of Besançon, hosting Professor Hendrik Lenstra in 1995, and the University of Helsinki, hosting Professor Nigel Cutland in 1997, did play their role remarkably well.

The science policy of the European Commission lives on a 4-year tempo, corresponding to the approval of the Framework Programmes for Research and Development. The 5th will soon be approved and will come into operation in early 1999. The EMS took part in the preparatory discussions through a widely distributed position paper available on EMIS. It prompted very positive reactions from mathematicians and scientists of other disciplines as well. We fought for course of a better recognition of the role of Mathematics in EC programmes, and have been heard on some points. The energetic presence in Brussels of the EMS Liaison Officer with the European Commission, Luc Lemaire, helped the EMS become a well recognized partner in these circles.

In our declaration, we stated as first priority the recognition by the European Commission of the data base MATH-Zentralblatt für Mathematik as a large infrastructure for European mathematicians. Thanks to the opennessomeness of the mathematicical section of the Heidelberg Akademie, chaired by Professor Dieter Puppe, of the FachinformationZentrum, and of Springer-Verlag, considerable progress has been achieved. It all started by a French-German collaboration, encouraged on the German side by the Editor-in-Chief of the data base, Professor Bernd Wegner, and conducted on the French side by the newly established structure MathDocCell, a joint structure of the University Joseph Fourier (Grenoble) and the Centre National de la Recherche Scientifique, under the responsibility of Professor Pierre Bérard and Professor Laurent Guillopé, now at the University of Nantes. A major contribution of this structure to the database is the new search and retrieval software used for the local servers, for the main server in Berlin and for its international New York and Strasbourg mirrors. On his side, the Editor-in-Chief has considerably developed partnerships in Eastern European countries, with the aim of a truly distributed constitution of the data base. From the moment it was associated to the discussions, the EMS insisted on having critical opinions received, analyzed and turned into improvements of the database. This mechanism will be achieved through an Innovation Committee, chaired by Professor John Coates, that has been put immediately to work. Since November 1997, the EMS shares the copyright of the database. The aim is now well defined: go much beyond the present partnerships, and make MATH-Zentralblatt für Mathematik a truly European endeavour, involving many countries through diverse entities, and many colleagues through their contributions.

EMPRESSA, the EMS Press Agency, has been set up in Strasbourg. It is still in its infancy. The objective is to help mathematicians whose function in the community is to circulate information of common interest, both technical and general, by putting together different sources. It should also provide journalists with first-hand information on what is going on in the mathematical world and who
are the people most likely to help them when they intend to cover mathematical topics.

As I mentioned earlier, mathematicians pay special attention to questions connected to teaching. This is why the EMS accepted a request from Ms. Edith Creasson, the commissioner in charge of science at the European Commission, to participate in a project aiming at establishing European reference levels for mathematical teaching at ages 16, 18 and after two years of university. A special working group has been set up under the responsibility of Professor Villani from Pisa University. It has just begun its activity, and will associate colleagues from many different countries to have a concrete and documented view of the situation, which is very diverse, as it should be. Here again, the aim is to ease compatibility, and certainly not plan uniformity.

Considerable efforts have gone into helping colleagues in appreciating EMS activities: members of the Executive Committee presented EMS actions at scientific meetings, an agenda describing the 1998 EMS activities has been sent to many mathematical departments and institutes, identifiable posters for EMS events are now systematically produced. Most of the tools that were developed for these purposes are due to the commitment of the EMS Publicity Officer, Mireille Chaleyat-Maurel, and the talent of Marie-Claude Vergne, secretary at the IHÉS, but also a dedicated painter. The aim is to build an image of the EMS around its logo, which represents the European mathematical community through the melting of the letters E, M, S into a new symbol while keeping its diversity displayed in the woven colours of the background. Dossiers giving a full account of EMS projects is available in French and in English, an idea of Professor Marc Brunaud. Colleagues who are interested in using them to make the EMS better known can request them.

As you can imagine, all this could not be achieved without the active involvement of a fairly large number of colleagues. It will stay that way in the future. Most of the work is carried out by committees (the EMS has 14 by now, besides its Executive Committee), which make suggestions, prepare calls, select applications, collect the information necessary for applications to sponsoring agencies, act when necessary, etc. Conditions for the success are an efficient management and sound finances. Keeping them in order has been remarkably achieved by Tuulikki Mikkeläinen, secretary of our Helsinki office, and the EMS Treasurer, Anitas Lahtinen, also based at Helsinki University. This gives me a good opportunity to remind you of the critical role that this university has played in the life of the EMS, by hosting the first meeting ever of the European Council, the EMS incubator, and by offering to host the office of the society, which is incorporated under Finnish law.

The EMS can live only because it has many hard working people behind it. This is also, in my view, the only way in which we can progress in our endeavour to help the emergence of an identity among European mathematicians. We need it. We will achieve it through our commitment.