

IMA 2005 Annual Report to IUGS

Appendix 2

IMA News published in "Elements"

Since the beginning of the publication of the new Magazine "ELEMENTS", IMA has given news through the President, Secretary and Chairs of IMA Commissions and Working Groups.

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All of these papers are also available from the IMA Website :
<http://www.ima-mineralogy.org/>



News from the IMA

The International Mineralogical Association (IMA) was founded in 1958 and is supported by 34 national mineralogical organizations worldwide. News of its activities will become a regular feature of *Elements*. Communication during the four-year interval between its main scientific meetings has always presented a problem for IMA, and *Elements* presents a historic opportunity to make our activities visible to the international membership.

Following IMA Business Meetings at the recent International Geological Congress in Florence, we can announce several developments:

Following a year-long competition, IMA Council has chosen a logo.

IMA now has its own domain name www.ima-mineralogy.org. A much enlarged website, which includes IMA news and links to websites of supporting organizations, is now online.

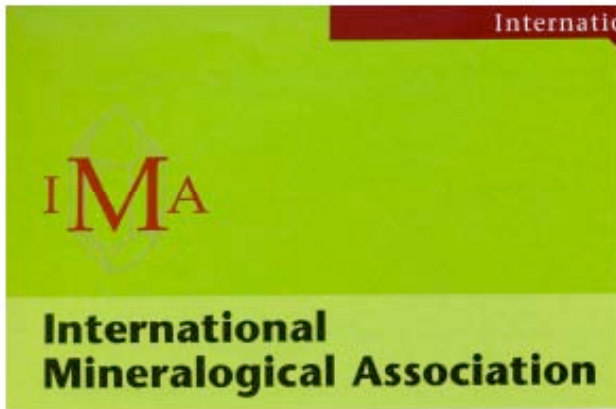
IMA 2006 will be held from 23 to 28 July, in Kobe, Japan. Visit www.congre.co.jp/ima2006/

IMA 2010 will be held in Budapest under the chairmanship of Prof. Ekkehart Tillmans of Austria.

Finally we are delighted to welcome into the IMA the national mineralogical society of Uzbekistan.



Ian Parsons,
President of IMA



International News

FROM THE PRESIDENT

The arrival of *Elements* on the mineralogy-geochemistry scene presents IMA with an unprecedented opportunity to reach its members and provides a means for its members to communicate with each other. Of course, by no means all members of IMA are members of the current group of societies supporting *Elements*, but most will be able to see the magazine through their institutional subscription to one of the technical journals produced by the consortium. The editors of *Elements* hope that other societies, particularly from countries where English is not the main language, will join and make use of the opportunities for widening communication that *Elements* offers. Like the predominantly English-speaking founding group, they can use *Elements* as a pointer to their national, own-language website to provide detailed information to members.

IMA is supported by small subscriptions, based on membership, from 37 mineralogical organizations, the largest with more than one thousand members, the smallest with less than ten. The oldest of these national mineralogical societies were founded in the early second half of the nineteenth century when many of the important mineral species were being established on the basis of crystal morphology and physical properties, a time when analytical chemistry was extremely primitive. The newer science of geochemistry grew up in a world in which travel and communication were more developed, and most geochemical organizations had an international character from the outset. The IMA was founded to improve contact between its historically fragmented members. Its best known activities are its quadrennial general meetings, the next in Kobe, Japan, in 2006, and the work of its Commission on New Minerals and Mineral Names. Its commissions and working groups regularly sponsor or organize

sessions at other meetings, such as the recent International Geological Congress in Florence and the forthcoming Goldschmidt Conference in Moscow, Idaho, and many of these lead to special publications or thematic journal issues. IMA has a new website (ima-mineralogy.org), which can connect you to each of the member organizations.

So, do we need an IMA, and can it do its job more effectively? We certainly need an international organization as a focus for the worldwide activities of mineralogists. The word 'international' in the title is essential to raise travel funds in many countries where science is less well developed. But our quadrennial meetings have been nothing like as successful as the annual geochemical Goldschmidt meetings, which often attract more than twice the number of delegates, even though the scientific territory the two organizations cover is a continuous solid solution. I fear that one reason for this is the current scientific dominance of an English-speaking world, whose members see the 'I' in IMA (or, for that matter, IGC) as implying that participants will have to sit through large numbers of lectures delivered in less than perfect English. If this influences your choice of annual big meeting, I can only suggest that the greater gains for mankind of a truly international scientific community is a factor you should consider, even if it entails a little extra effort.

IMA has long suffered from lack of a communications channel. *Elements* gives us the opportunity to be regularly in the public eye, and we will provide news of the activities of commissions and of

meetings in which we are involved. My personal view (not shared, I should say, by all members of Council) is that the IMA is bureaucratic out of all proportion to its modest size. The members of commissions are chosen as representatives of the supporting societies rather than for their scientific standing or ability to inspire. I think they would do a better job if composed of like-minded experts and enthusiasts in each field, and if they were responsible for their own membership. Commissions would not be required to involve every national organization, but would have the duty to serve the whole community. Their membership would be subject to the approval of Council, which would ensure that the international community was represented as widely as possible.

Running IMA is not easy. Many of the problems fall on the shoulders of our hard-working secretary, Maryse Ohnenstetter, and dogged treasurer, Kase Klein. It is frequently difficult to get answers from national representatives and even from chairs of commissions. No less than 10 out of 37 member organizations are currently behind with payment of dues for 2004 (some for several years). So let me end with a rallying call to you, the mineralogists who own IMA: it is only going to be as effective as you make it. Come to the Kobe meeting, support the work of the commissions and working groups, do your bit for mineralogy International!

Ian Parsons, President of IMA
 2002-2004

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International Mineralogical Association

International News

NEW MINERALS: HELP OR HINDRANCE?

The Commission on New Minerals and Mineral Names (CNMMN) was established at nearly the same time as the IMA, in 1959, for the purpose of controlling the introduction of new minerals and mineral names and of rationalizing mineral nomenclature. In the 45 years of its existence, the CNMMN has not been idle, judging from the list of 4000 or so minerals and mineral names on which the CNMMN has officially taken a decision on their approval, discreditation, and/or redefinition (available on the CNMMN website: www.geo.vu.nl/~ima-cnmmn). On this website one can also consult the procedures and guidelines for proposing new minerals and mineral names, and nomenclature reports published by the CNMMN.

On average about 80 new minerals are proposed each year, and about 60 of these are approved. Some persons consider the work on new natural phases as wasted time. Who indeed cares about these tiny and exotic grains? Why should one spend precious lab and personnel resources on the umpteenth arsenate, phosphate, or sulfate in some forsaken oxidation zone of an unimportant, abandoned ore deposit? Of course, a new substance has to be characterized first before it becomes clear whether it is an "exotic butterfly" or an important technical substance. The conclusive answer to these questions and considerations was given by one of my predecessors as CNMMN chairman, Akira Kato, at the start of the Paris 1980 IGC session on new minerals: "Once upon a time, feldspar was a new mineral!"

It so happens that in 2004 the CNMMN received not one, not two, but three proposals for new minerals in the feldspar group. Two of these have been approved: the hexagonal potassium feldspar kokchetavite and the not-yet-published tetragonal polymorph of albite. In both cases, these submicroscopic grains of new minerals have given important information on the genetic history of the rocks in which they were found. In the same year, the CNMMN also received proposals for new minerals in other common rock-forming mineral groups: five amphiboles, three micas, and even a new polymorph of quartz, named seifertite. Taking great pains on the full characterization of new minerals is obviously not always a waste of time, but a real help.

However, not only scientific aspects of these phases are important; appearances also count, especially for the large body of amateur mineralogists and mineral collectors. Some new minerals are a feast for the eyes, as you can see from the accompanying photographs of the Sb-Mo oxide biehliite (99-019) and a not-yet-published Na-Cu carbonate (2004-036). The ultimate in this category is of course the recent discovery in Madagascar of the whitish-pink to raspberry-red pezzottaite, a caesium mineral related to the beryl group. Gem-quality specimens of this new mineral (2003-022) have changed hands for six-figure prices!

The path of the CNMMN is not always strewn with roses. There is regular, heavy criticism on current mineral nomenclature, for example, by John S. White under the title "The Nomenclature Debacle" in the May-June 2004 issue of *Rocks and Minerals*, and by Ralph Kretz in the October 2004 issue of the newsletter of the Mineralogical Association of Canada. I have even been threatened with a global e-mail campaign because the CNMMN does not give unique names for minerals. Just one example: the mineral name 'apatite' does not exist any more—we have nowadays hydroxylapatite, fluorapatite, and chlorapatite, and also

(unjustly) carbonate-fluorapatite and carbonate-hydroxylapatite. How can one give the correct name to an obvious apatite specimen without an analysis of some kind? This problem could have been solved easily by using (optional) suffixes, as has been done successfully in the zeolite and labuntsovite groups.

We all know, of course, that mineralogical nomenclature is far from ideal. There are indeed too many inconsistencies that have arisen before and after the arrival of the CNMMN in 1959. The CNMMN has a so-called 50% rule for nomenclature in (binary) solid solutions, but at the same time there are major mineral groups in which the current nomenclature is not in accordance with this rule (e.g., amphiboles, pyroxenes, pyrochlores,

alunites). The CNMMN is continuously working on nomenclature problems, usually with subcommittees responsible for specific mineral groups or problems. A very peculiar problem, a real hindrance, is caused by the fact that more than 2300 natural phases, possible new minerals but perhaps meanwhile better described elsewhere, have been published without a name. The Subcommittee on Unnamed Minerals (they call themselves SCUM) is taking care of these orphaned objects.

Certainly, for quite some time to come, the CNMMN will not be without things to do!

Ernst A.J. Burke,
CNMMN Chairman
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Two recent new minerals described by a team from the Mineralogical Museum of the University of Hamburg (Jochen Schlüter, senior author). Top: biehliite from Tsumeb, Namibia, width = 15 mm; bottom: 2004-036 from Mina Santa Rosa, Iquique, Chile, width = 28 mm. Photographs by K.-C. Lyncker.

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Society News



International Mineralogical Association

IMA: MOVING FORWARD

Delegates present at the November 1, 1956, meeting of the Mineralogical Society of America were unanimously in favor of the creation of a committee to examine the possibility of forming an International Union of Mineralogy. The committee was formed early in 1957, with eight members from the US, UK, France, and Germany. The International Mineralogical Association was created shortly after. The

unanimous response of the delegates reflected their desire to present their scientific results at a meeting devoted to mineralogy and to promote mineralogy among the Earth sciences.

The delegates were also unanimously in favor of creating commissions, especially the Commission on New Minerals and Mineral Names (CNMNM), which was aimed at clarifying the nomenclature of minerals. This objective has been pursued since 1957, and as Ernst Barke, current chairman of CNMNM, indicated in the previous issue of *Elements* (June 2005), the CNMNM will still have a lot to do in the future! The Commission on Ore Mineralogy was created three years later, the Commission on Applied Mineralogy in 1979, and most of the other commissions in the 1980s.

All the IMA components have worked hard following the recommendations given at the general meeting of the IMA in Edinburgh, 2002. An increasing number of commissions and working groups are now involved each year in international meetings. In 2003, the IMA sponsored five sessions during the first DGS-AGU-EUG meeting held in Nice. In 2004, the IMA was involved in three large meetings, the 32nd International Geological Congress, in Florence, 20-28 August, when most of the IMA commissions and working groups organized sessions; the 8th International Congress on Applied Mineralogy, ICAM, in Aguas de Lindoia, Brazil, 19-24 September; and the 5th International Conference on Mineralogy and Museums, in Paris, 5-8 September. This year the IMA participated for the first time in the 15th Goldschmidt Conference, in Moscow, Idaho, 20-25 May. Next year the IMA will hold its general meeting in Kobe, Japan, 23-28 July. Takamitsu Yamamata is the meeting chairman, and the Kobe website can be visited at www.congre.co.jp/ima2006.

Following a change in the Constitution in Edinburgh, the interval between IMA business meetings has been reduced to two years. One meeting coincides with the quadrennial general meeting of IMA, and the second with the International Geological Congress. This change will help to maintain IMA activity between general meetings and facilitate collaboration with other Earth science organizations. The IMA has also made efforts to become more visible among the Earth sciences. The participation of IMA in International meetings has already helped a lot, as has the delivery of information about IMA activities in the *Mineralogical Association of Canada Newsletter* and now *Elements*. The IMA website (www.ima-mineralogy.org) has been revised and now provides links to the websites of supporting mineralogical organizations and information on the activities and membership of commissions. Like most of the international organizations belonging to the IUGS, IMA now has a logo, which was selected from sixteen proposals during the last IGC meeting. The contributors are kindly thanked for their participation.

The scientific activity of the IMA is carried forward by its eight commissions and five working groups, which are now involved in the rejuvenation of their structure and objectives. This was made possible during the Edinburgh General Meeting when Council was given the power to change officers between general meetings. This led to the creation of two new working groups, which were formally recognized during the business meeting in Florence: the Working Group on Environmental Mineralogy and the Working Group on Astronomical Mineralogy, chaired by D. Vaughan and F. Rietmeijer, respectively. The two working groups have started with a light structure, as each chairman has selected a small active group, supposed to be reactive enough to give quick answers to the whole community.

Cont'd on p. 242 (below)



IMA2006-KOBE

Expansion to Nano, Bio and Planetary Worlds

19th GENERAL MEETING OF THE INTERNATIONAL MINERALOGICAL ASSOCIATION

July 23 (Sun.) - 28 (Fri.), 2006
International Conference Center Kobe, Kobe, Japan
<http://www.congre.co.jp/ima2006/>

Scientific Sessions:
Mineral Physics and High Pressure Mineralogy
Structural Sciences of Minerals
Crystal Growth
Hydrothermal Process and Mineralization
Petrologic Processes
Planetary Materials
Environmental and Applied Mineralogy
Mineral Heritage
New Frontiers in Mineral Sciences

Deadline for abstract submission and advance registration:
February 28, 2006

The second circular is now available for downloading.

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IMA: MOVING FORWARD (cont'd from p. 242)

Previously formed working groups, with a structure broadly similar to that of commissions, comprise delegates proposed by the national mineralogical societies and who may not be deeply involved with the scientific development of the working group to which they belong. As an indication of the past low rate of evolution of the IMA structure, none of the IMA working groups was ever transformed into a commission, a process that should normally occur after a few years in the case of an active working group. Some working groups are twenty years old! The efficiency of the two working

group structures will be compared during the next general meeting in Kobe. On the other hand, the Constitution sometimes fails to accommodate some desirable changes. For example, the CNMMN and the CCM (Commission on Classification of Minerals) have planned to merge and have voted to do so, but nothing in the Constitution covers the merging of two commissions. A solution will nevertheless be found and proposed in Kobe. One of them could involve the dissolution of CCM and a corresponding modification of the CNMMN.

The basic principles formulated in the fifties for the creation of the IMA are still valid.

Since that time there have been revolutions in the Earth sciences, with the appearance of new disciplines that contribute greatly to the understanding of our planetary system. However, there is no doubt regarding mineralogy's future, considering its impact on so many aspects of society. To face the future with confidence, a strategic vision plan has to be defined for the IMA. The next general meeting in Kobe (July 23-28) will be the right place to formulate new directions and goals and to provide road maps for the different commissions and working groups.

Maryse Ohnenstetter
Secretary of IMA

Society News



www.ima-mineralogy.org

International Mineralogical Association



Richard Hagni

The scope of applied mineralogy is very broad, and contributions to CAM and ICAM sessions have evolved with time. Early sessions sponsored by the AIME-Process Mineralogy Committee dealt primarily with applications to the field of metallurgy, including mineralogical studies that led to the solution of beneficiation, hydrometallurgical, and pyrometallurgical problems. The first meeting of ICAM dealt with metallurgical materials and with industrial problems related to ceramic materials. The first IMA-CAM meeting dealt primarily with mineralogical studies of problems

APPLIED MINERALOGY: PRESENT AND PAST

'Applied mineralogy' covers investigations conducted specifically to solve problems related to the physical and chemical characteristics of minerals and materials. It has a vital role in economic activity and human welfare. The investigations are performed using all available mineral characterization techniques and can involve developing or adapting instruments to make the required measurements. Consequently applied mineralogy covers the complete spectrum of mineralogical activity: exploration for, and exploitation of, base metals, precious metals, base minerals, industrial minerals and materials, building and construction minerals, and carbonaceous materials and their by-products in mining, extractive metallurgy, pyrometallurgy, hydrometallurgy and economic geology. It also includes investigations of environmental materials, refractories, ceramics, cements, alloys, and other products, to solve problems related to the environment, health and criminal activities, and to obtain products for the development and building of equipment and structures.

The importance and recognition of applied mineralogy has grown strongly over the last quarter of a century. Although much research was conducted prior to 1979, most of the results remained in the files of industrial firms and were not available to other mineralogists. In the late 1970s and early 1980s, national groups were formed to promote oral presentations and written accounts. The Process Mineralogy Committee of AIME (American Institute for Mining, Metallurgical, and Petroleum Engineers) is one example of a national group devoted to applied mineralogy. The Process Mineralogy Committee sponsored papers at the component SME (formerly Society of Mining Engineers and currently Society for Mining, Metallurgy, and Exploration) and TMS (formerly The Metallurgical Society and currently The Minerals, Metals and Materials Society) meetings beginning in 1979. Other groups devoted to applied mineralogy were begun about that time in South Africa, Germany, Brazil, Argentina, and elsewhere. With the success of those groups, it became recognized that there was a need for an international body to sponsor papers on applied mineralogy.

In 1979 a group of mineralogists approached the IMA with a request to form a Commission on Applied Mineralogy, but the concept was not approved at that time. Consequently, Sytzen Hiemstra and Les Houghton of the Council for Mineral Technology (Mintek) in Johannesburg and other applied mineralogists in South Africa organized the International

Council for Applied Mineralogy (ICAM), and held the first International Congress on Applied Mineralogy (also ICAM) meeting in Johannesburg, South Africa, in 1981. Subsequently, the International Mineralogical Association (IMA) organized two sessions on applied mineralogy and initiated the Commission on Applied Mineralogy (CAM), through the efforts of Tony Naldrett, at the 1986 IMA meeting at Stanford, California. Thus, for the past two decades, applied mineralogists have been confronted with the availability of two organizations devoted to applied mineralogy, but with different terms of reference. ICAM congresses are autonomous, with many sessions on applied mineralogy at each meeting, and involve significant numbers of participants in the disciplines of metallurgy and ceramics. CAM meetings are integrated with IMA meetings, and fewer sessions are conducted on applied mineralogy. Beginning with the 1993 ICAM meeting in Freemantle, Australia, the two groups agreed to collaborate further: ICAM would co-sponsor many CAM sessions at the quadrennial IMA meetings, and CAM would sponsor sessions at the ICAM meetings. ICAM agreed to meet on a quadrennial basis half-way between the regular quadrennial IMA meetings. This relationship was reaffirmed by a vote of applied mineralogists at the CAM business meeting at the recent 8th ICAM meeting in Aguas de Lindoia, Brazil, in September 2004.

in metallurgy and especially with advanced microbeam techniques. Papers were solicited in four areas: mineral and energy materials exploration, mineral materials (including clay minerals), health and environmental mineralogy, and analytical methods. Early CAM sessions at IMA quadrennial meetings have dealt with mineralogical applications to metallurgical, ceramic, mineral exploration, and environmental problems and with the application of advanced microbeam techniques to those and other problems. More recently papers for CAM and ICAM meetings have broadened to include mineralogical applications to the areas of biomaterials and biomaterials, advanced materials, industrial minerals, gem materials, and cultural heritage.

The field is by its nature interdisciplinary. For example, the application of a wide variety of mineralogical techniques, including reflected and transmitted light microscopy, cathodoluminescence microscopy, X-ray diffraction, SEM, EPMA, image analysis, numerous other microbeam techniques and tomography, to the study of beneficiation, hydrometallurgical, and pyrometallurgical problems involves close collaboration with metallurgists. Using similar techniques, applied mineralogists interact with exploration geologists to facilitate mineral exploration, and the study of other industrial problems may involve specialists such as ceramists, biologists, and environmentalists.

Currently, CAM and/or ICAM are co-organizing six environmental and applied mineralogy sessions at the 2006 meeting of IMA in Kobe, Japan: bio-geo interface in minerals; mineral-water interactions: from microscopic to macroscopic aspects; environmental and medical mineralogy; clays and zeolites: natural and synthetic materials; crystals, ceramics and glasses with advanced physicochemical properties; and process mineralogy. CAM will be co-sponsoring applied mineralogy sessions at the ninth quadrennial ICAM meeting to be held in Brisbane, Australia, in 2008.

Richard Hagni, Chairman
Commission of Applied Mineralogy

Society News



www.ima-mineralogy.org

International Mineralogical Association

FROM THE PRESIDENT

MONEY MATTERS

First of all, some important news about a change in the executive committee of IMA. Cornelis Klein, of the University of New Mexico, who has worked extremely hard as treasurer of IMA since 1995, has decided that the time has come to pass this task to someone else. As well as dispensing the sums of money needed to keep IMA running, for items such as maintenance of the website (www.ima-mineralogy.org), the operating costs of groups such as the Commission on New Minerals and Mineral Names, and support for meetings, Kase has worked tirelessly to collect the annual dues of member societies. What should be a routine activity is frustrating and time consuming because many supporting organizations seem to be unable or unwilling to transfer the relatively small sums involved. Based on Kase's experience I put forward below some ideas on how the situation might be improved by changes in the laws of IMA. We all have to be extremely grateful for the amount of work that he has put into this task over the last decade.



Robert T. Downs, incoming treasurer

We welcome as our new treasurer Robert T. Downs of the University of Arizona in Tucson, where he is associate professor of mineralogy and crystallography. Bob is Canadian and obtained his first degree (in mathematics) at the University of British Columbia before undertaking postgraduate work in mineralogy at Virginia Tech and completing a post-doc at the Geophysical Laboratory in Washington. IMA has tax-exempt status in the United States, so it is logical to pass the position of treasurer to someone based there.



Cornelis Klein, outgoing treasurer

For a person with Bob's background, balancing the books should be a piece of cake, but only if we can overcome the problem of non-payment of dues. Should you be the responsible person in one of the several countries that has still not paid its dues for 2005, please send your money now to:

Dr. Robert T. Downs
1040 E 4th St., Dept of Geosciences, University of Arizona, Tucson Arizona 85721-0077, USA
E-mail: downs@geo.arizona.edu

Modernizing IMA

IMA is living in a new world. It is no longer largely invisible between its four-yearly General Meetings. Now, through *Elements*, every two months, it can reach every mineralogist on Earth who has access to the Internet. If your country's mineralogical organization is not one of those supporting *Elements* directly, you (or your institutional library) may well receive a hard copy because you subscribe to one of the journals of the supporting societies. Even if you have no such access, *anybody*, two months after publication, can download a pdf from www.elementsmagazine.org. I think that this is remarkable, and it is an opportunity the whole international mineralogical community must embrace. In the next paragraphs, I am going to review some of IMA's financial difficulties and make some personal suggestions (the bullet points) for their solution.

Our difficulty with getting some national groups to pay their annual dues is, I think, a symptom of a number of structural problems within IMA. You might imagine, since IMA exists to promote the interests of its supporting organizations, that collecting dues would be a comparatively routine activity. But in 2005 about a quarter of the 37 affiliated organizations had not paid by early December, making them at least one year late. Three organizations were more than two years behind in payment, and one was six years behind. Some of the defaulters are small communities in the less-developed world, and we should be sympathetic with their problems. But two defaulting organizations are located in countries that are among those with the biggest per capita incomes.

- At present IMA makes contact with societies through their National Representatives. Although many do an excellent job, some do not, and in future we shall also deal directly with society presidents and executive secretaries.
- At Kobe the Business Meeting should follow the rules of the IMA Constitution firmly. Countries in default for two

years or more will not be allowed to vote. Council will then consider whether any defaulting country should be deleted from the list of IMA members. This would, of course, be a matter of last resort, and we will always welcome letters of explanation from organizations who have genuine difficulties in paying.

A related problem concerns the formula used to calculate the subscription of each country. The amount (in US dollars) is calculated as $60 \times D$, where D is a number between 10 and 1 that depends upon the membership numbers of the supporting society. Thus the big societies of Germany, Russia and the USA, each with over 1000 members and $D = 10$, all pay \$600. At the other extreme, 16 societies have 25 members or less, $D = 1$, and they pay \$60. It isn't rocket science to figure out that an individual MSA member, for example, contributes a maximum of \$0.60, and a member of one of the little societies pays a minimum of \$2.40. This seems to me to be completely opposite to what is desirable.

- Societies should pay a per capita sum based on their exact paid-up membership. It would be up to each national society to decide how the money is collected, but it could form part of their own annual subscription and be identified as the IMA contribution. Of course, some individuals are members of more than one national society, but they have anyway been paying twice (sometimes more) under the present system.
- The exact sum will need careful consideration, but it will be not more than \$2 per member. Members of big societies will pay a little more than they do now, those in small organizations less.

This brings me to a final financial problem. Even if we do not change our funding formula, so that our 16 small societies continue to pay \$60, such is the avarice (defined, in my Oxford dictionary, as 'extreme greed') of the world's banks that the costs of international money transfer are almost as great as the amounts being