

**44th EXECUTIVE COMMITTEE MEETING
INTERNATIONAL UNION OF GEOLOGICAL SCIENCES
JANUARY 26 - 30, 1998
VIENNA, AUSTRIA**

MINUTES

Dr. Hans P. Schönlaub, the Director of the Austrian Geological Survey, welcomed the participants to the Palais Rasumovsky, the site of the Survey in Vienna. Prof. Eckart Wallbrecher, the President of the Austrian National Committee of Geology, and Dr. Wolfgang Reiter, senior representative of the Ministry of Science and Transport, welcomed the IUGS Executive Committee and was pleased that its annual meeting was being held in Austria.

R. Brett opened the 44th Executive Committee Meeting by welcoming the Committee members and observers to Vienna, and expressed his gratitude to the Austrian officials for the hospitality in hosting the meeting and their kind welcome. He also thanked Dr. Werner R. Janoschek, Vice Director of the Austrian Geological Survey, for his excellent organizing efforts.

The participants then introduced themselves briefly.

1. APPROVAL OF AGENDA

A. Boriani had distributed an order of business, proposing that Agenda Item 4 (Advisory Board for Research Development, ABRD) be discussed first in order to accommodate individuals who had participated in the previous day's ABRD meeting. H. Refsdal asked that item 11 (the presentation of the draft directory) be discussed during the first part of the meeting enabling the participants to review the content during the course of the meeting.

The Committee APPROVED the agenda with no further changes to the proposed order of business.

2. APPROVAL OF MINUTES OF EXECUTIVE COMMITTEE MEETING HELD IN COYHAIQUE, CHILE, JANUARY 1997

2.a. Approval of Minutes

The Committee APPROVED and ADOPTED the minutes of the 43rd Executive Committee Meeting in Coyhaique, Chile.

2.b. Actions arising from these Minutes

A. Boriani went through the items of the list of actions which had all been completed. Since there were problems funding the Strategic Planning meeting, the Bureau had decided to approach the issue in a different way (see item 8 c.). Neither I. Nyambok nor W. Al-Hashimi had received the draft minutes that had been sent to them by the IUGS Secretariat.

3. ANNUAL ADMINISTRATIVE AFFAIRS

3.a. President's Report

R. Brett informed the Committee that he had been busy travelling for IUGS and that most of his activities would be discussed later in the meeting. He, however, briefly summarized the major issues effecting the Union. ICSU grants were becoming more difficult to procure. Moreover, ICSU has been completely reorganizing. IUGS must keep abreast of these new changes. He urged the Committee members be more active, so that IUGS itself may be seen as active organization, attractive particularly to young researchers. He proposed that the Commissions be asked to prepare long-term proposals along with their annual reports. The general idea presented by Brett was to both reduce the distribution of money and the total number of commissions as well as to decrease the longevity of some. In this way, financial resources could be redirected to inter-disciplinary activities that may rejuvenate the Union.

The Committee ACCEPTED the President's report.

3.b. Past President's Report

W. Fyfe stressed that, in addition to strengthening *Episodes*, IUGS must stay alert for new opportunities and unique initiatives. As has been recognized by UNESCO and other international funding agencies, an organization's initiatives must take into account social needs: food, security, energy, water and waste management being the most important.

He regarded both symposia at the recent IGC in Beijing and the nuclear waste meeting with the European Union of Geosciences (EUG) in Strasbourg as great successes. He congratulated the convenors of the latter, Chris Talbot (Sweden) and Michael Langer (Germany) and hoped that proceedings from this meeting will soon be prepared.

He then reported on the 1996 Earth System meeting (Toronto, 1996) which was supported by IUGS, UNESCO, and several industrial partners. The participants to this conference came mainly from Europe and North America. Among these participants were 1000 teachers and their students who took an active role by participating in an open debate. A book related to these activities is to be published.

Fyfe reported on the planned cooperation with the International Society for Ecosystem Health (ISEH). IUGS has been invited to

meetings in France (May 1998) and in California (September 1998). Themes of these meetings are "Transdisciplinarity: Towards Integrative Process and Integrated Knowledge". UNESCO, World Bank and various private organizations will sponsor these meetings. The ISEH journal "Ecosystem Health" could clearly benefit from IUGS input. Fyfe also announced plans for a meeting in Pribram (October 1998) organized with geo-ethics groups located in Prague. Organizers anticipate a book to be published in time for the next IGC.

The Committee ACCEPTED the Past President's report.

3.c. Vice Presidents' Reports

G. Gaál apologized for not presenting a written report. In response to R. Brett's request for more activity from Executive Committee members, Gaal said that becoming "more active" would not be enough. He argued that there was a need for a change in the whole management of the Union, but that this was in the hands of the Bureau. In the capacity of representative for Central and Eastern European countries, he participated in an IGCP meeting and organized an IUGS-UNESCO workshop in Kazakhstan. At these meetings, Gaal witnessed the problems related to the lack of funding - young scientists were hardly paid at all. He is expecting 150 participants to a NATO Advanced Studies Institute he had been organizing together with A. Fabbri for the IUGS-Unesco Deposit Modelling Program. Now, as the new research director of the Geological Survey of Finland, he expected that his activities will be more centred in Northern Europe.

W. Al-Hashimi reported that he had been pushing for IUGS in the Arab world. Al-Hashimi had prepared a list of all Arab geological surveys that were potential IUGS members. This will be transferred to the Secretariat. He had urged the non-paying countries in the Arab World to pay their dues which most of them now are doing. He had also sought new members among Arab countries and Yemen has now applied for IUGS membership. He is now searching for funds to publish an Arab version of the COGEOENVIRONMENT Brochure. Al-Hashimi ended by noting that IUGS, together with other geological organizations, will sponsor a conference in Cairo next month.

Liu Dun-Yi had prepared a written report with the following content:

1. He had had a very busy year with most of the time spent on organizing the 9th International Conference on Geochronology,

Cosmochronology and Isotope Geo-logy - ICOG 9. The only visible result so far is the accomplishment of the Registration Circular.

2. He had attended a meeting on *Episodes* in Washington D.C in March to discuss the transfer of *Episodes* from London to Beijing.
3. He had also attended the International Workshop on Pre-site selection of the Chinese Continental Scientific Drilling Program held in Qingdao in August, 1997 cosponsored by ICDP and the Ministry of Geology and Mineral Resources of China. The first proposal of the Chinese Continental Scientific Drilling (CCSD) program was submitted to the Chinese government in 1989. Since then, intense preparations have been carried out. At the workshop geoscientists from both China and abroad finally agreed on the Donghai site as the best locality for the CCSD among the three candidate sites. The CCSD program has in 1997 been approved by the Chinese central government as one of the national key scientific projects to be processed from 1998 to 2002.

V. Zharikov reported that his activity last year had mostly been devoted to internal problems in Russia.

I. Nyambok said he has focused his efforts on promoting IUGS activities to African geoscientists with emphasis on the Commissions and *Episodes*. He reported positive indications of increased commitment to IUGS activities. Reduced financial resources have, however, had a negative impact on the scientific activities of African geoscientists. He recommended that organizations in industrialized countries that are better endowed with research funds, to develop research partnership with African colleagues for the advancement of Earth Science globally. He repeated his idea from the last Executive Committee meeting that IUGS should organize "lecture tours on current topical issues" to African countries to stimulate scientific exchanges and interactions.

He further suggested an IUGS program devoted to the study of "El Nino" cycles.

Nyambok also informed the Committee that the preparation and publication of the GSA(f) 95 Conference Proceedings were completed and that copies are already being distributed to the conference participants. It is a 745 page volume.

In October and November 1997, a five-week regional international training course on "Seismology and Seismic Hazard Assessment" was held in Nairobi, Kenya, and had been organized jointly

between University of Nairobi and Geoforschung Zentrum, Germany. The participants were gathered from various African countries. In addition to development of scientific knowledge, the course was aimed at improved exchange of data on volcanic activities and earthquake activities among African countries.

F. Hervé reported the change of the adhering body of Chile, now the Geological Society. Chile has now a representative in ICSU. Through the Geological Society, he had tried to promote *Episodes* subscriptions to mining companies. He had contacted the president of the Association of Latin American Geological Surveys and through him urged Latin American countries to pay their dues to IUGS. He is also collaborating in the organizing of the IGC, because Chile is one of the countries involved in the IGC organization.

Z. Johan remarked that, unfortunately, several of the Latin American member countries are in-active.

I. Speden submitted a written report stating that he had established contacts with the National Committees of New Zealand, Australia and Papua-New Guinea and provided these contacts with reports on IUGS Committee meetings and activities. The reports were suitable for publishing in Newsletters. He reported that he had not been able to establish contact with Indonesia.

Speden's discussions in Canberra in March with Australian geoscientists contributed to increased contact between the Australian Academy of Science and the Geological Survey of Australia with the aim of an increased input from the Society to IUGS activities. The Royal Society of New Zealand has been kept informed routinely of IUGS activities and its Council has approved an increase of one step in its subscription level to IUGS.

He reported that he had attended meetings of the Committees of the Geological Society of New Zealand and the New Zealand Geophysical Society to report on IUGS activities and opportunities. Also, Speden had been communicating with Glen Caldwell and Michael Schmidt-Thomé during the finalizing of the "strategic planning guidelines".

Speden further reported on his contribution to a jointly authored article for *Episodes* on the "sustainability of geothermal resources" (published in vol. 20, No 1, 1997) and that he had solicited articles for the journal from New Zealand,

Australian and New Guineas contacts. Efforts will continue in this area.

The Committee ACCEPTED the Vice Presidents' reports.

3.d. Secretary General's Report (Appendix 1)

A. Boriani offered some additional information to the written report distributed to the Executive Committee participants. He described the workload of the Secretary General office as heavy, perceiving that there has been an increase in demands from both ICSU (filing of reports and grant applications) and IGCP projects. Lastly, A. Boriani urged Committee members that when planning a long absence, to forward the Bureau a contact address.

The Committee ACCEPTED the Secretary General's report.

3.e. Treasurer's Report

Z. Johan distributed the written Treasurer's report to the Committee participants and gave the highlights of the year. As a result of a successful attempt to recover unpaid dues, IUGS assets have increased. Johan pointed out this USD 130,000 increase makes it possible prepay more of the 1998 IGCP projects, both the IUGS and UNESCO allocation, and fund other IUGS bodies. The Treasurer's histogram revealed the distribution of assets in various IUGS current accounts, by month. He explained that high proportion of IUGS assets are kept in the reserve account in order to be prepared for any unforeseen drop in revenue from membership dues and/or the irregularity of IGCP payments from UNESCO.

Z. Johan presented the 1998 IUGS budget. The "contingency" expense item was kept at USD 40,000 for optimal flexibility in meeting the fiscal demands for 1998.

The Committee ACCEPTED the Treasurer's report, commending him for excellent work.

3.f. IUGS National Committees

A. Boriani informed the Executive that approximately thirty National Committee reports had been submitted. Short and informative reports had been received from Argentina, Austria, Belarus, Canada, Germany, Finland, Lithuania, Poland, Slovakia,

Spain, Sweden, Syria, Taipei, Turkey, Uzbekistan, and Vietnam but without comments or suggestions. Instead a few National Committees, such as Belgium, suggested a four-year program for IUGS. Estonia and Kazakhstan complain because there are no geologists from their countries in IUGS bodies. The Czech Republic asks for more copies of Episodes. France suggests to redefine strategy, to strengthen the links with IUGG and to change the IGC steering committee. Hungary sent a complete report suggesting to do high standard consulting to make money for IUGS. New Zealand suggests distributing the minutes of the meetings quickly, noting that the visibility of IUGS is too low. It also expresses concern for the decrease of funds for IGCP. Switzerland commented that IUGS is too little known and recommended initiatives on CO₂ disposal. Zambia requested funds. Italy insists on strategic planning and South Africa had submitted a very detailed report without suggestions.

A. Boriani reported that while in Oslo in September, Bureau members met with National Committee representatives from Denmark, Norway, Estonia, Lithuania and Finland, and, while in Paris, they met with representatives from France. During the year, R. Brett met with representatives from Belgium, Holland, Italy, Hungary and Greece and he stressed the importance of meeting representatives from National Committees on every possible occasion.

Observers at the Executive Committee meeting that represented national committees from Austria and countries surrounding agreed to offer their reports orally.

E. Dudich (Hungary) reported that their National Committee held two meetings in 1997, one of which was attended by R. Brett.

H. Schönlaub (Austria) described the Austrian Committee's involvement with internal evaluation of the Earth Science departments at the Universities. The Committee had also advised on teaching Earth Sciences at high schools. Austria is one of the candidates for the IGC 2004 and a preparatory steering committee had been nominated. In Austria, an IGCP project meeting was held with participants from more than 40 countries.

F. Wezel (Italy) reported that during the year the National Committee year was highlighting the establishment of the Federation of Earth Science Societies. Since Italy also was a candidate for the IGC 2004, the National Committee had formed a preparatory committee.

P. Neuman-Mahlkau, new chair of German National Committee, related his committee's concern over government budget cuts to universities, the possibility of university closures and the decreased enrolment in geology courses. The development of the Potsdam GeoForschungsZentrum was described as a positive achievement.

V. Stedra, representing the Czech Republic, anticipated that her committee's revised statutes would draw some attention and increase the committee's visibility. Two Czech geologists lead IGCP Projects.

D. Hovorka (Slovakia) described their committee's involvement in IGCP-related activities and their efforts to promote earth science teaching in primary schools.

R. Volkov (Russia) felt that the National Committee's financial situation was improving and was optimistic about their ability to transfer the 1997 membership dues. IUGS had sponsored forty-five scientists to attend IUGS-related meetings in Russia. The 26th Microsymposium on Comparative Planetology was held in Moscow, October 1997. Members of the Russian NC aided in translation of the IUGS publication on the classification of igneous rocks.

W.G.E. Caldwell, ABP Chairman, asked the National Committee representatives for help in generating manuscripts for *Episodes*. A. Boriani reported that New Zealand is now in category three, thanks to I. Speden.

Boriani informed the Committee that Yemen had applied for membership and described the geological community in the country. He said that the Bureau had also responded to both Namibia's and Gambia's request for membership application forms.

The Executive Committee ACCEPTED the National Committees' reports and THANKED the representatives for their oral contribution.

The Committee unanimously APPROVED Yemen as a new Member, pending ratification by the IUGS Council.

4. ANNUAL REPORTS OF IUGS BODIES AND FUTURE PLANS

4.a. ADVISORY BOARDS

4.a.1. Advisory Board for Research Development (ABRD)

W. G. E. Caldwell, who had chaired the previous day's ABRD meeting (25 January, 1998) reported that, at the request of the Executive Committee, the work of three Commissions had been reviewed -- that of the Commission on the History of the Geological Sciences (INHIGEO), the Commission on Systematics in Petrology (CSP), and the Commission in Igneous and Metamorphic Petrogenesis (CIMP). Dr. H. Torrens (INHIGEO President) spoke for his Commission, as did Dr. N. T. Arndt (President) for CIMP. Dr. R. Schmid and J. Brandle spoke for CSP.

The Chairman remarked that he considered it entirely appropriate and desirable for the Union, as a matter of policy, to review the work of all its Commissions from time to time but that it was evident from the meeting the day before that not all Commissions were as aware of this policy as they should have been. Some representatives had attended with evident misgivings about the purpose of the review and had initially spoken defensively. R. Brett and Caldwell had had to reassure them about the purpose of the meeting and to call for the fullest possible open co-operation between the Board and the Commissions, and an amicable atmosphere of discussion, to ensure that maximum benefit was derived from the review exercise by both Commissions and the Union as a whole.

Caldwell then summarized the discussions that had taken place, the main constructive criticisms and suggestions offered by the Board (most of which were gratefully received), some of the problems the Commissions faced, and the recommendations made by the Board following each individual review. The recommendations are included in these Minutes under the relevant agenda items for the Commissions in question. Overall, the Board was satisfied with the progress being made by all the Commissions examined and recommended that the Executive Committee continue to support their good work.

Caldwell concluded his report with two formal suggestions. First, he recommended that the Commissions be fully informed that their activities will be reviewed from time to time, as a matter of course, by the Board, and that the Commissions be encouraged to ensure that maximum benefit is derived from this process by engaging in full, frank, and open discussion of their work and its objectives. Second, the Chairman reminded the meeting that, when the Board was established, it was intended to be a forward-looking body which would advise the Union on its future research directions, but that, in the last several years, its principal task had been to undertake periodic reviews of the Commissions. Although he strongly favoured maintaining these

reviews, he encouraged the Executive Committee to consider assignment of a much broader range of tasks to the Board, including consideration of the implications for IUGS of the rapid changes taking place within the and their subdisciplines and the burgeoning need for closer co-operation between the geosciences and most other sciences.

The Committee ACCEPTED the ABRD recommendations, which would be further discussed under other relevant agenda items. It THANKED the Advisory Board for its review and G. Caldwell for having chaired the meeting.

4.a.2. Advisory Board for Publications (ABP)

Non-Serial Publications

R. Brett referred to G. Caldwell's comprehensive report on the Publishing and Marketing of Non-serial Publications, which had been distributed to members prior to the meeting. It was, he thought, the single most important item on the ABP agenda and invited immediate consideration of it. He reminded those present that the report had been prepared in response to the Committee's request, that it was designed to provide information only, and that the Board would study the problem further in the light of the discussion and any suggested directions that might emerge from it.

Speden reviewed what he considered to be the key points of the report: (a) that IUGS had allowed a bewildering array of publications to appear under its name without any form of checking or supervision; (b) that the variable quality of these publications was cause for concern; (c) that a preliminary survey of publications during the last ten years suggested that about 10 monographic works, based on IUGS-sponsored studies, were being produced annually but that IUGS itself only produced about 10% of these; and (d) that IUGS had not received the full measure of credit due to it in works published by outside agencies and institutions. He commented on possible solutions to the collective problems and said that, so far as he was concerned, they came down to two: should IUGS try to become its own publishing house or should it make another attempt to find a publishing partner to handle non-serial publications on its behalf?

A lengthy discussion followed in which Speden argued that ways have to be found to improve IUGS's control of, and financial return from, the non-serial publications. He was uncertain about the Union's ability to act as its own publishing house and

thought an agreement with a small publishing house might be preferable. Brett reminded the meeting that not all non-serial publications are money-makers and there was a need for the publications program to balance material that deserved to be published regardless of potential sales and other popular material that would sell well and make a profit. He thought this could be of concern to some potential publishing partners. For example, he thought it unlikely that a partner would be keen to handle the stratigraphic correlation charts, for example.

W. Fyfe said that in trying to make an arrangement with a publishing partner, IUGS must first ascertain how it is going to exert greater control over its publications. No party should be able to use the IUGS name and logo without first submitting a manuscript to the ABP and having it approved. Caldwell explained that the present Publications Policy called for this, but the policy frequently was not followed, perhaps for the reasons he had stated in the ABP report. Fyfe said he also wished to emphasize the importance of Caldwell's remarks about marketing in the report. Marketing was now more than ever a crucial aspect of successful publishing.

A. Green commented on the procedures followed by ICL, where it is necessary to ask for a number for any potential publication which had the effect of involving the Commission in ensuing procedures. Following along the same lines, W. Eder reported that IGCP Project Leaders must get prior approval to put the IGCP logo on their publications. Caldwell interjected to say that this procedure was true also of IUGS; nonetheless, numbers had been assumed or given out without the knowledge of the ABP. E. Dudich said that there were two kinds of IGCP publications: first, those published through the IGCP Secretariat and under its control; and second, those published by the projects themselves, not financially supported by IGCP, in which permission had to be sought to use the logo. The control in the latter case was in the hands of the project leaders. Brett pointed out that IGCP is a joint IUGS-UNESCO program, but few seemed to be aware of this or to make a point of acknowledging IUGS's contribution.

The discussion then turned to the practicalities of IUGS establishing some kind of partnership with a geological publishing agency or publishing house and whether or not the potential partner should be large and capable of looking after both printing or marketing, or small and capable of doing the printing only, with IUGS doing its own distribution and marketing. Hervé said that distribution and marketing were more important considerations than the printing. Johan agreed, saying

also that IUGS must always be conscious of the expenditures that would be required to make the Union its own publishing house or to enter into an agreement in which printing, advertizing, and marketing would be handled on its behalf. A university press might be the ideal kind of potential partner; they were usually very competent at advertizing and marketing. V. Stedra suggested that IUGS should attempt to align itself with a small publishing house, and suggested the Czech Geological Survey as a possible example. Zhang suggested that the editorial office of Episodes could be converted into a publishing house for IUGS by increasing the size of the office staff. A. Green pointed out that, as the publisher of Episodes, IUGS was already in a sense its own publishing house but agreed that there was a need to improve the whole approach to marketing. Brett stated that he found Zhang's suggestion attractive, but it would be necessary to go into the proposal in detail and consider it together with other possibilities.

Fyfe drew attention to the responsibilities currently being carried by the ABP and the need to strengthen the Board's hand. In this respect, he wondered if the ABP might be more appropriately named the "Board on Publications". Brett remarked that this implied an amendment to the IUGS Statutes which could not be undertaken until the Council meeting in 2000. He further reminded the meeting that the whole problem of IUGS publications was an old one and emphasized that, regardless of the name given to its publications committee, there was a need for the Executive Committee to make some hard decisions on this matter, including ones that would ensure greater IUGS control over what is published under its name. Caldwell added that, in his mind what was more important than the name, was that the Executive Committee understand and accept that the ABP at present was much more than its name suggested; it was, de facto, a combination of advisory board, publications committee, and (increasingly) publications secretariat.

Schmidt-Thomé said that he agreed with Brett and brought discussion back to the basic questions that had been posed in the ABP report and the explanation of what would be involved in answering any and all of them. This spawned another round of general discussion which led to the following two-part resolution (moved by Speden, seconded by Fyfe):

That the Advisory Board for Publications review and revise the conditions and guidelines for publication within the auspices of IUGS and that these be circulated as soon as possible to all constituent members of IUGS, together with a

covering letter specifying the advantages and benefits to IUGS.

That the Advisory Board prepare conditions and guidelines which would allow IUGS to approach suitable publishing organizations for the effective publication, distribution, and marketing of appropriate manuscripts.

Boriani said that he thought the motion to be too comprehensive and would prefer a motion on each of the major questions posed in Caldwell's report. Caldwell said that he had had insufficient time to ponder all the implications of the Executive's two part motion. For example, as explained in his report, the ABP had hesitated to revise and recirculate the IUGS Publications Policy until it was clear what path the Executive wished to follow in the future in handling non-serial publications. He went on to say, however, that he would be happy if the meeting could agree that the ABP should work within the spirit of the resolution rather than perhaps adhering strictly to its precise wording and the order of the wording. This was agreed.

Caldwell informed the meeting that the ABP had met on two occasions prior to this reporting and that much routine business had been transacted. He reminded those present that some of the more routine items had been reported on in writing prior to the meeting and he saw no need to take up more of the Committee's time in discussing them further.

The Committee THANKED and COMPLIMENTED the Advisory Board for Publications for its comprehensive report and coverage of the options it contained, and THANKED G. Caldwell for chairing the ABP meetings.

Episodes:

The ABP Chairman said that Editor Zhang, had made a separate report on the status of *Episodes*, as was appropriate given its importance, but that there were one or two additional points that he would like to make.

Caldwell reported that continuous open communication had been established between the ABP and the Episodes Secretariat in Beijing and how much the Board welcomed this. In another couple of months, the journal's Editorial Board should be fully in place, but members should realize that it will then take some time for this Board to function smoothly, assisting the Editor

in all the various tasks assigned to it. In the interim, Zhang will be setting up the technical process to underpin the refereeing of original articles.

Caldwell went on to explain that the principal difficulty that Editor Zhang and his team have had in the last year has been shortage of manuscripts. No one had realized that the manuscript "tank" was effectively empty when the journal had been transferred to China. He would, therefore, like to renew his annual appeal to the Vice Presidents to help *Episodes* by acting as regional representatives engaged in soliciting high-quality articles and other relevant contributions to the journal. He considered such help vital, particularly during the ensuing period when the Editorial Board would be finding its feet.

Zhang Hongren spoke of the long process of establishing the *Episodes* Office in Beijing. The editorial staff had attended meetings in Washington, D.C. and at the British Geological Survey (BGS) and Dr. R. Walshaw, the former Editor, had visited Beijing giving his valuable experience to the new staff. Zhang said that the office is situated in the Academy of Sciences. It is small, because the idea is to keep a small kernel team and have much of the work done outside on contract. They strive to keep the expenses low, despite the high cost of international postage.

1997 had been a year of restoration of the number of issues per year and number of pages which are now back to what they were some years ago. Zhang hopes to improve the electronic equipment even more in the future. He contended that the journal could and should play an important role in the geological community worldwide. *Episodes* can be a visual geological congress of the Union, because not everybody has the opportunity to attend the Congresses.

Zhang concluded by stressing the importance of continued contact with the IUGS Bureau and ABP.

A. Green commented that *Episodes* has been launched as a *Geology* type of journal. Unfortunately, at the moment there are three journals with the same aim, and he questioned whether there were enough papers to maintain three journals. It is important that *Episodes* is available in libraries in order to be read by potential authors. He asked how it could be made more desirable to publish in and more desirable to receive.

Brett was convinced that the new Editorial Board, though not completely defined yet, would help. Ten distinguished persons

had already accepted. Zhang said that he was sure that the impact of the journal would be much stronger in the future. E. Dudich proposed that Commissions and affiliated organizations should report on their activities, not in bureaucratic terms, but scientifically.

The Committee COMMENDED Zhang Hongren, the Editor of *Episodes*, and his staff for their highly effective work on the journal in the last year.

IUGS Website <<http://www.iugs.org>>:

J. Aaron, IUGS Webmaster, distributed "The Report to the IUGS Advisory Board on Publications: Status of the IUGS Website" to the meeting participants. He described the various improvements that have been made to the website, noting that the site has tripled its volume of information in the last year and that collaboration has been established with *Episodes* and the International Geological Congress. At least 65 organizational and personal websites have been linked to the IUGS Website. He said that the site has served about 400 host computers monthly. He mentioned that his main problem had been lack of response from some of the IUGS bodies.

The Committee THANKED J. Aaron and COMPLIMENTED him for his work on the IUGS Website.

4.a.3. Advisory Board for Finances (ABF)

M. Schmidt-Thomé, ABF Chairman, commented that nothing could be started before the terms of reference had been updated.

4.b. COMMISSIONS

4.b.1. Commission on Comparative Planetology (CCP)

Chief Accomplishments in 1997:

Interface with other international projects: The Executive and membership interface closely with the respective national space agencies NASA, Russian Space Agency, and ESA. Membership represents IUGS-CCP interests in: Meteoritical Society, GSA, IAGC, COSPAR, AGU, CNES, EUG, EGS, IAVELI, IUGG, CGS, CSA, International Academy of Astronautics, and Planetary Society by direct membership of official bodies within these organizations.

The Commission cosponsored 3 major international meetings on comparative planetology: "the 28 th Lunar and Planetary Science Conference", held in March in Houston, Texas, USA. and 2 Microsymposia, one held in Houston in March and the other held in Russia in October. Plans are being finalized to cosponsor several additional topical conferences in 1998.

R. Brett (commentator) commented that as a founding member, he knows this Commission well. Its task was to foster comparative planetology world-wide to the geological community.

The Committee ACCEPTED the CCP report. Further comments will have to await the ABRD review of the Commission in April.

4.b.2. Commission on Fossil Fuels (CFF)

SUMMARY 1997:

The Commission is currently working along the strategic directions presented in July 1995 to the ABRD. The 1997 Annual Report provides an overview of the Commission's activity including the research to be carried out by the IUGS Commission on Fossil Fuels over the next four years (1997-2000).

During 1997 several meetings were held between J. Burrus and R. Sinding-Larsen at the French Petroleum Institute in order to provide research plans, implementation plans and in-depth reviews of the Commission activities. The Commission intends to organize a basin modelling and resource assessment session to be held at the 32nd International Geological Congress in Brazil. On request from the IUGS Bureau a research proposal for activity under science and technology for earth management (STEM) with the following title was elaborated: "CO₂ disposal in natural reservoirs - geological pre-requisites for long term storage". Considerable attention has been given to ensure the overall coherence of the CFF activities, their priorities and their relationship to other programs and activities.

W. Al-Hashimi (commentator) commented that the annual report of the Commission gives the chief products and working plans for this year. Regarding the Subcommission on Fossil Fuels Research, their activity focused on meetings dealing with hydrocarbons. Al-Hashimi said that IUGS had been criticized for not being active enough within petroleum geology; however, R. Brett argued that that had not been necessary because of so much governmental and company support within this field.

A. Boriani said that the Bureau would ask R. Sinding-Larsen to organize a symposium on CO₂ disposal for the next IGC.

Z. Johan recommended that Sinding-Larsen establish contact with Euro-Geosurveys Secretariat in Brussels because some European geological surveys are already involved in CO₂ disposal.

The Committee ACCEPTED the report of the Commission on Fossil Fuels.

4.b.3. Commission on Geological Science for Environmental Planning (COGEOENVIRONMENT)

SUMMARY 1997:

Successful efforts by COGEOENVIRONMENT has heightened the mandate and objectives of the Commission fostering greater external financial support and international interactions and activities. The Commission's global profile has expanded considerably with an increase in Corresponding Membership to over 200 and countries represented now at 70. Similarly, the executive has had to expand its number to 10, now representing 8 countries, to keep pace with an elevated list of activities, ventures and products arising from a renewed global interest and attention in the role of geosciences in environmental planning and management. Public, private and government awareness and appreciation for the importance and role of geosciences has improved significantly through the Commission activities during the last year. Formal ties with related or affiliated organizations, commissions and scientific bodies were established to improve cross-disciplinary communications. Numerous short courses, workshops, forums, conferences, and meetings were organized and/or co-sponsored on a variety of subjects ranging from environmental geology mapping, to GIS technology and geological hazards. Public and professional lectures as well as papers in journals on similar subjects were both given and published by many officers and members. Printed 10,000 copies of the Chinese version of the Brochure "Planning and Managing the Human Environment: the essential role of geosciences with versions in Spanish, Italian ready for publication and moves to obtain translations in German, French and Arabic awaiting translation and publication. COGEOENVIRONMENT Newsletters 11 and 12 were published. Urban Geology Newsletter published. New working group on Geomedicine held their first organizational meeting in Colorado. A prominent international publication on Aggregate Resources by the Commission was released through Balkema and another on Environmental Geology Mapping is imminent.

F. Hervé (commentator) said that the Commission had submitted a complete and informative report, adding that this was an active commission with well focused activities. Last year, a wide variety of documents were published, but it was not clear how one could obtain these publications. In 1998, the Commission plans to begin testing of the Geoindicators in different countries, to publish a book on environmental mapping, start the activities of the working group on geomedicine, and establish a web site. Hervé summarizes his commentary by stating that all in all, this is a very active commission that helps make IUGS visible all over the world.

The Committee ACCEPTED the COGEOENVIRONMENT report, commending the Commission for good work.

4.b.4. Commission on Global Sedimentary Geology (GSGP)

Chief Accomplishments in 1997:

The main activity in 1997 was the organization of a major international convention in Calgary, Canada (June 1-6, 1997). The Commission was in charge of putting together the Technical Program of the convention, which was sponsored jointly by the Canadian Society of Petroleum Geologists (CSPG), and the Society for Sedimentary Geology (SEPM). The Convention, which titled Sedimentary Events and Hydrocarbon Systems, ended up being the geological happening of 1997. The Technical Program, put together by GSGP and its Chairman, was broadly organized along the lines of Larry Sloss' cratonic megasequences to commemorate the 35th anniversary of their publication. The program covered five days including a 2-day core conference, with both pre- and post-conference field trips and short

courses. More than 600 papers were presented during the course of the Convention and nearly 3,000 people attended the Convention, one of the most successful geological meetings ever held in Canada. The program, which featured 48 oral sessions (six simultaneous) and 21 poster sessions, covered both the academic and economic aspects of sedimentary geology, and thus catered to the traditional audiences of both sponsoring societies. Each day was devoted to one or two of Larry Sloss' sequences (Sauk-Tippecanoe, Kaskaskia, Absaroka, Zuni-Teijas), thus honoring the legacy of the father of modern sequence stratigraphy. In addition to its overall involvement in putting together the Technical Program, GSGP also directly sponsored three special sessions: one session organized under the umbrella of Project Pangea by Warren Manspeizer (USA) on Resources of Pangea, and two sessions on Source Rocks of Western Canada and the World, organized by Cindy Riediger and Martin Fowler under the umbrella of the CRER Project.

I. Speden (commentator) pointed to the fact that the Commission was, as of last year, under new leadership. A major achievement was the convention in Calgary, Canada where GSGP directly sponsored three special sessions, including one on the Pangea Project. He recommended that the Secretary General write and compliment the Commission on its activities and initiatives, and especially on the new project of a multidisciplinary nature. The Commission should be encouraged to adopt such a multidisciplinary approach and to consult and involve appropriate expertise from other organizations such as the Stratigraphy Commission and the International Paleontological Association.

R. Brett proposed that the Commission be reviewed by ABRD. W. Al-Hashimi agreed and suggested contacting the founder of the Commission R. Ginsburg, before writing to the new Commission leaders.

The Committee ACCEPTED the report of the Global Sedimentary Geology Commission. The Committee AGREED that the Commission should be reviewed by the ABRD.

4.b.5. Commission on the History of Geological Sciences (INHIGEO)

Chief Accomplishments in 1997:

Through the work of Professor Kenneth Taylor (USA), Dr Silvia Figueirôa (Brazil), and Dr Hugh Torrens (UK), INHIGEO organized a section on the history of geology at the International Congress of the History of Science, held in Liège in July, 1997. There were eight invited speakers, and a number of other papers on the history of geology were delivered at the Congress, several by INHIGEO Members. The invited papers were devoted to two themes: (1) the history of mining; and (2) the use of non-written sources in studying the history of geology. Arrangements have been made for the publication (July 1998) of the invited papers in the history of science journal, Annals of Science, subject to usual refereeing processes. The services of two commentators for the invited papers were obtained, and their comments may also be published in Annals of Science.

The papers presented at the Beijing International Geological Congress have been published as part of Volume 26 of the Congress Proceedings: Wang Hongzhen, D.F. Branagan, Ouyang

Ziyuan and Wang Xunlin (eds), *Comparative Planetology, Geological Education, History of Geology*, VSP, Utrecht and Tokyo, 1997, 306 pp. The history of geology section runs from p. 147 to p. 306.

INHIGEO was a 'nominal' co-sponsor of the Hutton/Lyell Conference held in Britain in August 1997, with numerous high-quality papers and field excursions, and a large international attendance. The meetings were actually organized and financed by the Geological Society of London and the Royal Society of Edinburgh, but eight invited papers were delivered by INHIGEO members and INHIGEO Member Professor Robert Dott provided an excellent summary of the ideas put forward at the Edinburgh part of the Conference. (This will be published in the next Newsletter.) INHIGEO President, Dr Hugh Torrens was responsible for one of the field excursions. The Conference Proceedings are currently being edited for publication.

ABRD recommendations to the Executive Committee concerning INHIGEO:

"The ABRD commended INHIGEO for its work over the last several years and for its efforts to be strongly international in its coverage. The high scholarly calibre of much of INHIGEO's work was noted. While unwilling to advocate that Commission change its plans or reorientate its objectives in any substantial way, the Board concluded that the Commission nonetheless profitably might seek to engage more actively in co-ordinating its activities in the history of the earth sciences with the activities of other IUGS Commissions and affiliated organizations, and with IUGG. The Board recognized the Commission's acute financial problems, emphasized that INHIGEO was not alone in this respect, and encouraged the Commission to make its meetings as self-supporting as possible."

R. Brett (commentator) referred to the ABRD meeting the previous day, noting that the members had agreed that the history of geology is important and that the Commission is the only place that this can be looked at internationally. At the ABRD meeting, A. Dudek had discussed how many individuals, especially young people, have the misconception that certain very old scientific developments are new. Dudek had recognized that publishing the historical aspects of these developments in ordinary science journals would be difficult, nevertheless, he was of the opinion that this was an important task.

E. Vaccari, INHIGEO representative, explained that the Commission is dealing with a field which is at the border of other disciplines, such as history, and that its attempt to establish a closer communication with the geological community has been unsuccessful. INHIGEO is now looking for younger colleagues and for representation in parts of the world where the Commission has not been represented so far.

It was also noted that INHIGEO may be overlapping with the Commission of the Philosophy of Science, which is not a regular inter-union commission but a commission of an affiliated organization.

The Committee ACCEPTED the INHIGEO report, commending the Commission for interesting work and ENDORSED the ABRD recommendations.

4.b.6. Commission on Igneous and Metamorphic Petrogenesis (CIMP)

Chief Accomplishments in 1997:

The sponsorship of:

- (i) The "International Workshop on Continental Roots", 10- 13 October at Cambridge, MA, USA.*
- (ii) A special session at the Fall meeting of the American Geophysical Union: "Geodynamics of Giant Magmatic Ore Systems" 8-12 December 1997 in San Francisco, California.*

The chief products in 1997 were the proceedings of a previous CIMP sponsored symposia published in Chemical Geology, Vol. 139, pp.1-297 (Highlights of the Goldschmidt Meeting: Hofmann volume).

ABRD recommendation to the Executive Committee concerning CIMP:

"The ABRD commended CIMP for its good work. The Board recognized the importance of the Commission's efforts to advance the fields of igneous and metamorphic petrology in fundamental ways by convening meetings designed to this end and publishing the proceedings as special issues of appropriate, leading periodicals.

While supporting the continuation of this practice, the Board suggested to CIMP that it might also make a greater effort to turn its face outward and consider engaging in more cross-, inter-, and multi-disciplinary projects with other Commissions and affiliated organizations within IUGS (CSP, for example). Moreover, Board members were of the view that there were major problems to be solved in the environmental and resource fields, and that CIMP profitably might seek to co-ordinate some of its activities with work being actively promoted not only by IUGS but also by ICL and IUGG.

Behind these recommendations was a firm belief that CIMP's expertise and help could be a major asset in addressing these wider issues and that to collaborate in this way could only enhance the Commission's image and importance. The Board encouraged CIMP to give more consideration to offering field

courses. The Commission was urged to hold a meeting in the near future, when these and other ways of diversifying the Commission's involvement would be addressed. Finally, the Board asked CIMP to consider as objectively as possible the benefits that might be derived from merging CIMP with CSP and possibly widening the mandate of the single 'Commission on Petrology' (presumably with several subcommissions) that would be the effective result."

A. Boriani (commentator) referred the Executive Committee to CIMP's written report and brought the ABRD recommendations (above). He informed the Committee that his own comments very much coincided with those of the Board.

The Committee then discussed the differences and similarities of two petrology Commissions within IUGS, and the possibility of a merger, with CIMP as a subcommission. CIMP Chairman, N. Arndt had been made aware of this possibility. In the end, the Committee questioned the benefits of a merger for the community and IUGS.

The Committee ACCEPTED the CIMP report and ENDORSED the ABRD recommendations.

4.b.7. Commission on Stratigraphy (ICS)

From the 1997 ICS Bureau Report:

ICS is constituted of 17 Subcommissions, the Committee on Quantitative Stratigraphy and an Intercommission Working Group, which prepares the new edition of the Global Stratigraphic Chart in cooperation with the Commission on the Geological Map of the World (CGMW) and Unesco. ICS has more than 400 titular members. The Working Group on the Terminal Proterozoic System (TPS) had been established as an independent Subcommission.

Future activities: *The Bureau has decided to take action on the following points:*

- 1) A list of undefined GSSPs should be created, and each should be given a deadline.*
- 2) The Bureau decided to encourage the Subcommissions to put the well-described GSSPs to a Full Commission postal vote.*
- 3) ICS will take the initiative to establish a database on fossil ranges, bioevents and other events. Isotope and other events and sea-level curves should also take a more important place in the programs of the Subcommissions.*

GSSP: *The Bureau has shortly discussed a suggestion to create a permanent marker for GSSPs: 1) a bronze plate with the sign of IUGS, the name of the GSSP and an explanatory text, and 2) the need of setting up a new Subcommission on the Stratigraphic Lexicon.*

Subcommissions: *Most of the Subcommissions and working groups within Subcommissions work in close cooperation with IGCP Projects. Detailed information can be found in the annual reports of Subcommissions. Several ICS Subcommissions edit newsletters, where relevant new stratigraphic results are published and problems of interregional correlation discussed. Most of the Subcommissions have elected new officers in 1996 and several of them*

are studying new subjects alongside with or after the definition of stage boundaries by GSSPs. The Silurian and the Devonian SCs should be mentioned. They can start from a solid base (all stage boundaries defined by a GSSP) allowing them to follow new orientations as cyclic stratigraphy and to test new methods in an objective manner. Further mentioned should be the program of the Neogene SC to extend astronomical calibration to the Miocene.

Pleistocene: Thanks to the guidance provided by the Ad-hoc committee of IUGS, the long lasting polemic about a displacement of the base of the Pleistocene can now be brought to an end. As soon as the Quaternary SC has brought forward the necessary scientific and technical arguments that might justify a change, a decision based on objective criteria will be possible.

Global Chart: The final version of the Global Stratigraphic Chart of ICS will very probably be established before the end of 1997 so that its publication can be envisaged for 1998.

I. Speden (commentator) referred to the 1997 annual reports of the overall Commission and Subcommissions that had been distributed to the Executive Committee members before the meeting. He said that this large Commission is divided into a number of subcommissions, with a total of 2000 active participants. Most sub-commissions reported difficulties in establishing good Global Stratotype Section and Point (GSSP).

Speden remarked that the volume and scope of work being undertaken is truly impressive, more so than indicated by Remane's "consolidated report". In addition to the above summary, Speden highlighted the key achievements and developments:

1. All Subcommissions, except three, are planning to complete the designation of GSSPs by the year 2000, with the exceptions being the Carboniferous, Triassic, and lower Miocene.
2. Most Subcommissions and Working Groups have reviewed their program structure; and management and many have initiated new projects often of a multidisciplinary or cross-activity nature.
3. Revised "Guidelines of ICS" published in *Episodes* in 1997.
4. Most Subcommissions contribute to IGCP projects or to those of relevant associates or the Working groups of other Unions.
5. Several Subcommissions have established Web Pages.
6. Most Subcommissions note the importance of IUGS funding to catalyse their work. It is the only source of funding other than extensive support from host organizations, which are very supportive in terms of time, overheads and general input. However, several Subcommissions noted that some institutions were finding it increasingly difficult to provide support. Almost every Subcommission notes the problem of insufficient funding to finalize or progress projects. Only two seem to have made any effort to seek funds from other sources: the Neogene SC and the Committee on Quantitative Stratigraphy,

which has sold software. The Quaternary Subcommittee is heavily dependent on INQUA for funds, and does not acknowledge the IUGS contribution.

7. The Jurassic Subcommittee notes a need to involve younger workers because of an aging population of contributors.

Speden remarked that ICS and several Subcommittees report the importance of their programs in publicizing the value of IUGS, geoscience and collaborative work. He referred to the quality and impact of ICS work, including the catalytic effects and support for IGCP.

He ended his reporting by commenting on the financial situation of ICS.

A. Boriani said that ICS is older than IUGS itself and is probably the most important Commission of the Union, noting that IUGS is mostly known for this Commission.

I. Nyambok recommended that the subcommittees standardize their budget reporting.

F. Hervé remarked that students are surprised to find out that there is a Commission that draws boundaries all over the world under the umbrella of IUGS: this is important for the visibility of the Union.

The Committee ACCEPTED the comprehensive ICS report, commending the Commission for the overall level of its work. It encouraged the ICS Bureau to promote Subcommittee work where there is limited activity, and seek from the Quaternary Subcommittee a speedy resolution to the Plio/Pleistocene boundary issue.

4.b.8. Commission on Systematics in Petrology (CSP)

SUMMARY 1997:

The Subcommittee on the Systematics of Metamorphic Rocks (SCMR) held a successful working meeting in Verbania, Italy, September 1997. Several contributions were distributed as discussion circulars under the general heading "Towards a unified nomenclature in metamorphic petrology". Four of them were fully discussed and will be presented via World-Wide Web. Also the Glossary of Metamorphic Rocks (700 terms) has made substantial progress.

Agreement and final decision on standard definitions of metamorphic rocks and structures, and on provisional proposals of systematics in the nomenclature of metamorphic rocks were established.

The Subcommittee on Data Bases in Petrology (SDBP) was established in 1984 in response to the growing need and importance of electronic data management in petrology and has assembled >20.000 rock descriptions for igneous rocks in the database IGBA. In 1997 this data collection and the Sedimentary Base SEDBA were made accessible in the Internet via the URL <http://www.ige.csic.es/sdbp.htm>. This site allows both interactive data retrieval as well as downloading the databases.

A Subcommittee on the **Systematics of Sedimentary Rocks (SCSR)** was founded following suggestions by the Executive Committee, and started work after the 30th IGC in Kyoto. Despite of many efforts, this subcommittee faced a lack of response from the scientific community. Therefore, the activity of this subcommittee is formally suspended. However, there are widely expressed views about the necessity of international coordination and communication in classification and systematics of sedimentary rocks. Propagation of these views will lead to re-installation of SCSR.

Connections to other groups with focus on classification remain very important, such as the IMA Commission on New Minerals and Mineral Names. Links to the IUGS Commission on Igneous and Metamorphic Petrogenesis, CIMP have been renewed and strengthened following the nomination of Prof. N. Arndt as new chairman of CIMP.

The Subcommittee on the Systematics of Igneous Rocks (SSIR) has published in 1989 its major contribution to the systematics of igneous rocks in the book 'A Classification of Igneous Rocks and Glossary of Terms' by Le Maitre (ed.), Bateman, Dudek, Keller, Lameyre, Le Bas, Sabine, Schmid, Sorensen, Streckeisen, Woolley and Zanettin. The wide acceptance of this classification and the rapid international acceptance of the classification scheme is a mile-stone in systematics of igneous rocks. This is also obvious from the translations into Chinese and Russian (1997).

ABRD recommendation to the Executive Committee concerning CSP:

"The ABRD reported much good and important work being undertaken by CSP and commended the Commission for its efforts. The Board recognized that the Commission had several subcommittees on classification and taxonomy and entirely approved of keeping some of these subcommittees dormant while others forged ahead to complete their current projects. This seemed entirely sensible given the nature of the work being undertaken and current budgetary constraints. Be that as it may, the Board noted that rapid pace of change in the geosciences today (including a substantial change in emphases). For this reason, it believed that the sciences would be better served if CSP would make every effort to speed up its work on classification and nomenclature.

The Board also invited the Commission to be more outward looking in the work it undertook and in planning future projects. Collaboration with IMA, for example, in dealing with mineralogical matters, and closer links with COGEOINFO, especially in terms of becoming involved in that Commission's Thesaurus, were two of a number of examples offered in this connection. Finally, the Board asked CSP to consider as

objectively as possible the benefits that might be derived from merging CSP and CIMP and possibly widening the mandate of the single 'Commission on Petrology' (presumably with several subcommissions) that would be the effective result."

A. Boriani (commentator) noted that this is another commission that has been reviewed by ABRD, so he had little to add to the comments made by the Board. He was doubtful that the Subcommittee on Databases in Petrology had a significant role.

R. Brett gave the history and rationale for the establishment of this Subcommittee. He agreed that there is a disproportion between the effort for maintaining the database and the number of potential users.

D. Hovorka said that analysis of type locality rocks from a table produced in 1935 is still being used for terms of reference and that it would be useful if they were able to publish a more recent reference analysis.

Brett questioned the Executive Committee's role in instructing a commission to discontinue one of its subcommissions and suggested that the Bureau be asked to further investigate the matter.

The Committee ACCEPTED the CSP report, ENDORSING the ABRD recommendations.

4.b.9. Commission on Tectonics (COMTEC)

SUMMARY 1997:

*The year 1997 has been an especially successful one for the Commission . For example, the project of the **Subcommission on Tectonic and Surface Process Interactions (SOTSP)** on "High-resolution earthquake recurrence assessment from coastal lowland environments" achieved such good initial results in central Greece and the Dead Sea basin that it has attracted sufficient funding not to need further COMTEC support. Likewise, the **Subcommission on the Rheology of Rocks** wide-ranging project on "Transcontinental fracture systems" has yielded such excellent results from investigations of cataclastic deformation of chromites in the Great Dyke of Zimbabwe and the fracture distribution of gold deposits in the Zimbabwe craton that it too no longer requires COMTEC funding.*

International meetings at the Geological Society of London on "Crustal responses to sea-level change" and "Volcanoes, Earthquakes and Archaeology" which were cosponsored by SOTSPI and INQUA's Neotectonics Commission proved to be so successful that two books will arise from them as will other collaborative research projects. Two different topics within the project on "Granite intrusion mechanisms through time" initiated by the Rheology Subcommittee were successfully completed and have given rise to a working group that aims to establish criteria for the recognition of magmatic and non-magmatic microstructures in igneous rocks.

In conclusion, the 1994 recommendation of IUGS that COMTEC should concentrate on high-level international collaborative research programs has been consolidated in 1997, so that such programs are now COMTEC's dominant activity.

Liu Dun-Yi (commentator) confirmed that in 1997 there has been increasing progress towards changing the emphasis of the Commission's activities from education to high level collaborative research, as suggested by IUGS Advisory Board for Research Development in 1994. Furthermore, most programs are co-productions that arise as a result of individuals with a good project funded by at least one source other than COMTEC.

The Committee ACCEPTED the COMTEC report.

4.b.10. Commission on Management and Application of Geoscience Information (COGEOINFO)

Chief Accomplishments in 1997:

- a) *Sales of the hard copy version of the 2nd Edition of the Multilingual Thesaurus of Geosciences continued to generate a small revenue for COGEOINFO (see financial statement below).*
- b) *Participated in a meeting of the European Geological Surveys and made a detailed presentation describing the Multilingual Thesaurus (MT), resulting in the selection of the IUGS/ COGEO-INFO Multilingual Thesaurus by the European Geological Surveys for their use as an international source of Geoscience terms. This will generate some additional revenue for COGEOINFO in future years.*
- c) *Participated in the planning of and will be a co-sponsor of a major international meeting, GeoinfoVI. a meeting on Scientific Editing and Information Management to be held in Washington. D. C. during September 1998.*
- d) *The MT continues to be used as a standard for common indexing of geoscience literature in international cooperation programs, e.g. the PANGIS network in Africa. The MT is also used as a basis for the exchange of geoscience information between different language environments, e.g. between bibliographic databases in Europe and the USA. Exchange programs based on the use of MT are conducted between Germany, France, Finland, Italy, Spain, Czech Republic, Russia and USA.*
- c) *Representatives from 29 African and Asian nations have now received training on geoscience databases designed under the guidance of COGEOINFO. COGEOINFO members supported this course. The main funds were provided by the Belgian Co-operation Agency to the Belgian Royal Museum for Central Africa. Training for representatives from about 15 African and Asian nationals continues on an annual basis.*
- f) *At the most recent UNESCO General Conference the successful and important role of the PANGIS program was recognized by the African representatives, and the General Conference accepted their motion for continued support during 1996-1997. At the same time, several Asian countries expressed their interest in this geoscience program and requested UNESCO to initiate a similar undertaking in the Asian region.*

Liu Dun-Yi (commentator) reported that the Commission had a very active year. He referred to its summarized report (see above) and added a few points related to the Commission's working groups. Workshops were being held by Working Groups for Geoscience Application in Developing Countries and the Societal Applications of Geosciences Working Group. He further reported

that the commission had helped organizing a conference in the Netherlands entitled "Space-Time Modelling of Bounded Natural Domains: Virtual Environments for the European Geosciences". The Working Group on Social Application of Geosciences has continued to develop educational materials in 1997.

The Commission's main problems in 1997 were time constraints on members caused by the current political strain on national geological surveys.

A. Boriani asked what impact the activity of the commission has had on geological communities. He also remarked that PANGIS is mainly run by CIFEG, an organization under BRGM and UNESCO. He explained the relationship between CIFEG and COGEOINFO: COGEOINFO provides CIFEG the "know-how" for manipulating the data, and CIFEG introduces the data and does the job.

G. Gaál pointed out that the Multilingual Thesaurus has appeared in the annual report for many years. The job they are doing in providing expertise in the use of computers is given by many private companies. In summarizing, Gaál stated that he doubted the usefulness of this commission. I. Nyambok agrees with Gaál's impression.

Noting that COGEOINFO had never been under ABRD review, R. Brett recommended that it would be timely to conduct one and suggested involving G. Gaál's expertise.

I. Speden suggested the development of guidelines for the annual report to be compiled with fixed subjects. It was decided that these guidelines be produced by the Bureau.

The Committee ACCEPTED the COGEOINFO report. It decided that the Commission will be reviewed by the ABRD.

4.c. AFFILIATED ORGANIZATIONS

R. Brett noted that the affiliated organizations are fully autonomous: IUGS has no control over their activities. Of interest to IUGS is their level of activity, their effect on IUGS, their involvement with developing countries and their cooperation with any IUGS Commissions or Working Groups.

W. Al-Hashimi felt that IUGS should be strict with the affiliates, informing them that they have to present their annual report or else be excluded from IUGS.

A. Boriani asked for a decision about the affiliation requested by the European Mineralogical Union (EMU). In his presentation, Boriani expressed his favour in granting provisional acceptance to this union. Three of the founding societies own the European Journal of Mineralogy and everybody can submit papers to the journal. Z. Johan points that since EMU is kind of roof for the European mineralogical societies it overlaps the functions of International Mineralogical Association.

Brett supported EMU affiliation, stating that IUGS will become this Union's link to ICSU. Also, it is possible for EMU to propose symposia at the IGC, receive *Episodes*, and to suggest IUGS programs.

The Committee unanimously ACCEPTED the European Mineralogical Union (EMU) as an Affiliated Organization.

4.c.1. American Association of Petroleum Geologists (AAPG)

SUMMARY 1997:

The American Association of Petroleum Geologists conducted a joint conference with the Austrian Geological Society in Vienna and held its Annual Association Meeting in Dallas, Texas.

It published three new titles in its various Publication Series and continued monthly publication of its AAPG Bulletin and EXPLORER.

It sponsored 10 distinguished lectures, taught 23 short courses and 7 schools, held 22 field seminars, conducted 4 Hedberg research conferences and had its visiting geologist programs at 50 universities. Many of these lectures, courses and conferences were outside the USA.

Its chief products were three AAPG Memoirs, one special Publication and two maps.

W. Al-Hashimi regretted that no report was received as of 20 January 1998. (Please note that the report was received by the IUGS Secretariat during the course of the Committee meeting).

The Committee REGRETTED that the AAPG report did not reach the Committee meeting in time.

4.c.2. Association of Exploration Geochemists (AEG)

SUMMARY 1997:

The Association of Exploration Geochemists (AEG) had over 1200 active members in 1997. In 1997 the AEG sponsored and co-sponsored two major meetings. In May the AEG sponsored the 18th International Geochemical Exploration Symposium (IGES) in Jerusalem, Israel and in October the AEG co-sponsored the 4th International Symposium on Environmental Geochemistry (ISEG) in Vail, Colorado, USA. Both meetings were well attended and re-emphasized the importance of geochemistry in environmental as well as exploration issues. The AEG continues to support a web site and information about the Association and coming sponsored events can be found at <http://aeg.org/aeghome.html>. The AEG welcomes links to other related web sites. The Association held elections in 1997 and new Officers and Council Members were elected.

In addition to sponsoring meetings, giving short courses, and publishing the Journal of Geochemical Exploration the Association publishes a quarterly newsletter, EXPLORE, which is distributed throughout the world and contains timely articles on a variety of exploration geochemistry topics including environmental topics related to exploration. Several recent issues have included colour maps and figures. The Association continues to produce special publications including a digital bibliography of over 11,000 references on exploration geochemistry and computer software on statistical applications to geochemical data.

G.Gaál (commentator) said that AEG is a very prestigious organization with 1200 members. He expressed his pleasure of having received this report and recommended its acceptance.

The Committee ACCEPTED the AEG report.

4.c.3. Association of European Geological Societies (AEGS)

Chief Accomplishments in 1997:

- *MAEGS-10 (Challenges to Chemical Geology) was held in Carlsbad (Karlovy Vary), Czech Republic from 1st - 5th September 1997. Two meetings of the Executive Committee were held on 31st August and 2nd September 1997 in Prague and Carlsbad. The General Assembly was held on 3rd September 1997 in Carlsbad.*
- *MAEGS-10 had exactly 100 participants from 17 different countries. 32 talks and 37 posters were contributed to the conference.*
- *Since MAEGS-10 the President of the association is Dr. M. Novak (Czech Geological Society), Vice President is Prof. J. Civis (Spanish Geological Society) and the Secretary is Dr. J. Wiegand (German Geological Society).*
- *During the meetings some important modification of the AEGS statutes were worked out by the Executive Committee and approved by the General Assembly.*
- *Until now the association is working without any funding, which is increasingly causing problems. As of the beginning of 1998 an annual membership fee was established.*

Z. Johan (commentator) reported that this affiliate's membership is low and its main activity is the holding of meetings.

The Committee ACCEPTED the AEGS report.

4.c.4. Arab Geologist Association (AGA)

SUMMARY 1997:

- 1. Geological conference on the Middle East: AGA efforts have been successful in locating a place for the fourth meeting. The conference will be held in Beirut from 9 to 12 November 1998 in cooperation with the Lebanese National Geological committee.*
- 2. Symposium on Geological correlation of the Phanerozoic in the Arab world organized jointly with the organizing committee of the 4th Conference on the Geology of the Arab World. The Symposium will be held parallel with this international meeting from 21 to 25 Feb. 1998 in Cairo.*
- 3. AGA pursued its efforts in establishing a geological correlation program between Arab countries. Many geological institutions in Arab countries expressed willingness to host the workshop e.g. Morocco, Libya, Yemen.*

W. Al-Hashimi (commentator) mentioned the activities stated above and added that, in 1997, AGA had attempted to encourage membership and dues payment to IUGS.

The Committee ACCEPTED the AGA report.

4.c.5. American Geological Institute (AGI)

SUMMARY 1997:

The number of member societies grew to 31 in 1997 with the affiliation of the Paleontological Research Institute and the reaffiliation of the American Geophysical Union. Further growth is expected. Contacts with several other geoscience societies interested in affiliation with AGI are in the working.

Two significant publications were released in 1997; the fourth edition of the "Glossary of Geology" and the second edition of the "Dictionary of Mining, Mineral and Related Terms".

AGI has seen growth in Government Affairs Program (GAP) and GeoRef Databases. Phase III of the National Geoscience Data Repository System (NGDRS) program was initiated in 1997.

R. Brett (commentator) regretted that no report was received as of 21 January 1998. (Please note that the report was received by the IUGS Secretariat during the course of the Committee meeting).

The Committee REGRETTED that the AGI report did not reach the Committee meeting in time to be discussed.

4.c.6. Association of Geoscientists for International Development (AGID)

SUMMARY 1997:

1997 has been a difficult year for AGID due to the decline in core funding and it had to commence a restructuring of its operations accordingly. Because many people gave freely of their time the activities have been continued, albeit in some areas on a reduced scale.

The following publications were issued:

- *A double edition of Geoscience and Development containing a special section of reports by student recipients of AGID's William Greenwood Scholarships, went to press in December, and the first edition of a new slim newsletter - AGID Update - was distributed at the end of the year.*
- *AGID special publication No 20 in association with COGEOENVIRONMENT, Urban Geoscience, published by commercial publishers (Balkema) in 1996, received good reviews in several international journals.*
- *Free copies of the AGID publication "Geoscience and Training" (Balkema) and Environmental Geochemistry and Health (Geological Society Special Publication) were distributed on request to many libraries in developing countries.*

The AGID CANADA Book and Journal Donation Scheme continued to grow and now has charitable status.

The William Greenwood Scholarship Scheme were given to seven applicants and several "Top ups" were awarded in 1997 and a further eight are currently under review. The IUGS grant for 1997 was largely used for funding the scholarship scheme.

Small amounts of seed money were distributed for projects, particularly in India, Pakistan and Bangladesh, where local funds were available

AGID sees merit in forging closer links with other IUGS associate bodies, acting as a conduit to developing countries with small and less well organized geoscience communities amongst ninety or so countries in which AGID has members.

I. Nyambok (commentator) reported that AGID faced a lean year in 1997 and appears not to have undertaken any major activities. Publications have been distributed to several libraries in developing countries. AGID plans to sponsor a conference/ workshop on Urban Geosciences in Dhaka.

The Committee ACCEPTED the AGID report.

4.c.7. American Geophysical Union (AGU)

SUMMARY 1997:

With more than 35,000 members in 115 countries studying earth-related topics from the earth's core to the edge of the solar system, AGU is a very large and wide-ranging organization.

A recent emphasis has been to develop capabilities for electronic information transfer. Advances have recently also been made in meetings, international outreach, earth science education and awareness and influence in the public policy arena. AGU is in the process of offering its information services electronically. "Water Resources" is already complete on line and "Geophysical Research Letters" are also well on its way. In addition, AGU has launched one of the most innovative electronic-only journals to date: "Earth Interactions."

AGU continues to expand internationally. This year an all-English, all-electronic journal, "Geomagnetism and Aeronomy International", was started in Russia. This is a Russian journal that is accessible to non-Russian scientists representing AGU's commitment to supporting and developing excellence in earth science publications around the world.

AGU's scientific meetings and conference programs continue to grow. Its fall meeting in 1997 was the largest ever, with over 7,500 attendees and more than 6,200 presentations, which received excellent international press coverage.

In the field of education, last year's workshop in cooperation with Keck Geology Consortium and with support from the National Science Foundation, on undergraduate earth science education, was a tremendous success. To further aid in the implementation of the ideas developed at this workshop, AGU has plans for a November meeting for heads and chairs of earth science departments from across the United States.

AGU remains committed to assuring that decision makers use sound scientific information when making writing public policies.

F. Hervé (commentator) regretted that no report was received as of 21 January 1998. (Please note that the report was received by

the IUGS Secretariat during the course of the Committee meeting).

The Committee REGRETTED that the AGU report had not reached the Executive Committee meeting in time to be discussed.

4.c.8. Ass. Internationale pour l'Étude des Argiles (AIPEA)

Chief Accomplishments in 1997:

- *11th International Clay Conference Ottawa, Canada, June 1997*
- *Acceptance of the Clay Mineral Society of America as an affiliated society.*

Z. Johan (commentator) referred to the above accomplishments and remarked that AIPEA is working well and had not submitted any request for money for 1998.

The Committee ACCEPTED the AIPEA report.

4.c.9. Carpathian Balkan Geological Association (CBGA)

SUMMARY 1997:

- *Czech Republic became a member of CBGA, Slovenia was accepted as an observer (will become a member at the next Council Meeting in August 1998).*
- *A workshop on Sequence Stratigraphy was held in Sdmeg, Hungary, in June 1997. It was jointly organized by the Standing Commission of Stratigraphy, Palaeontology, and Paleogeography and by the Standing Commission of Sedimentology.*
- *The Standing Commission of Metamorphism organized a meeting in Budapest from November 6th to November 7th, 1997.*
- *Standing Commission of Hydrogeology: The Yugoslavian National Committee prepared a meeting in October 1997 "100 Years Hydrogeology in Serbia".*
- *Commission of Ore Deposits: A Symposium on Gold deposits exploration was held in Yugoslavia April 1997 and the Proceedings were edited.*

G. Gaál (commentator) reported that CBGA will have a meeting, chaired by W. Janoschek, in Vienna.

W. Janoschek stated that CBGA meets the IUGS criteria: It is international and its commissions are in close contacts with IUGS commissions. CBGA has attempted to intensify collaborative efforts with the Commission for the Geological Map of the World (CGMW). CBGA is looking for new members among ex-Yugoslavian countries and encouraged geologists there to organize. Janoschek pointed out that CBGA collects no membership dues.

R. Brett noted that the association was very active.

The Committee ACCEPTED the CBGA report.

4.c.10. Commission for the Geological Map of the World (CGMW)

Chief Accomplishments in 1997:

meetings:

1997 is a year that comes in between the holding of the general assemblies of the commission. In the course of this year, a number of meetings took place within the framework of the cartographic programs currently in progress. They concerned mainly the Geological Map of Europe (Paris), the Tectonic Map of Asia (Moscow), the Tectonic Map of Africa (Pretoria, Antananarivo and Donala) and the Two Last Climatic Extremums (Cassis and Cairns).

maps in press

Geological Map of South America at 1:5 M scale: After the presentation in Beijing (1996) of the digitized printout, the Brazilian Geological Survey (CPRM), General Coordinator of this program, went on with the last corrections before the final printing planned for 1998.

Mineral Atlas of the World at 1:10 M scale: the digitized printout of sheet No. 9 (Europe), compiled by the Geological Survey of Norway, was corrected and finalized. The paper issue should be printed by the very end of 1997 and the digitized version is expected to be in the market next year.

Tectonic Map of Europe at 1:5 M: although some material difficulties subsist in Russia, the black proofs of the whole set of maps (5 sheets) were finally submitted to the CGMW Secretariat.

G. Gaál (commentator) reported that the Commission is active and has produced significant results, such as the Tectonic Map of the World. There is no doubt that this is a useful organization.

J. Aaron noted that CGMW produces very good maps, for which it is not charging high prices. However, there is a problem with marketing and producing.

The Committee ACCEPTED the CGMW report, but decided that more budget information was needed from this affiliated organization.

4.c.11. International Center for Training and Exchanges in the Geosciences (CIFEG)

Chief Accomplishments in 1997.

- PANGIS -Pan-African Network for Geological Information System - continued.
- Setting up of three new partners in the network: Niger, Senegal and Burkina Faso, was a final technical mission.
- Technical meeting of PANGIS in Pretoria in October with four workshops:
 - * Presentation of the bibliography with ACCESS;
 - * Presentation of the factual system;
 - * Potentialities of Internet - by two representatives of COGEOINFO
 - * Geoscience and development

This meeting gathered representatives of 33 African countries during one week.

- Finalization of the setting up for databases network in the Far-East (Cambodia, Laos and Vietnam) UNESCO wished to start a somewhat similar network in the same region and CIFEG participated in a meeting in UNESCO, Paris with IUGS, representatives of Cambodia, Philippines and Vietnam, in order to bring forward a network of databases (SANGIS).
- The following publications were issued in 1997:
 - * Water resources in OSS countries; evaluation, use and management, in cooperation with OSS and UNESCO.
 - * The Natural hazards and their management in Ecuador (in French and Spanish) in cooperation with ORSTOM and IFEA
 - * Two numbers of PANGEA - the bulletin of CIFEG.
 - * Two numbers of the Bulletin of African Geology, in cooperation with MRCA (Belgium).

A. Boriani (commentator) reported that CIFEG is very active in running PANGIS. Last October, they held an interesting meeting in Pretoria to promote the use of the PANGIS system in Africa. Recently, they had a meeting with representatives from countries of the Far East to create SANGIS. They are conducting research in the Caribbean and hold training programs like the one being held in western Africa, next year, on the environmental impact of mining. Boriani thinks that they deserve the EC's compliments for what they are doing, particularly in developing countries.

Brett asked Boriani to inform CIFEG that the organization could be viewed by some as being governmental. Since IUGS does not include governmental organizations, it should do its best to appear as an international organization.

The Committee ACCEPTED the CIFEG report.

4.c.12. Circum-Pacific Council for Energy and Mineral Resources (CPCEMR)

I. Speden (commentator) commented on the CPCEMR activities, noting that the Council has a carefully planned program of preparing and publishing geological, tectonic, mineral resources and energy resources maps of quadrants of the Pacific Basin at scales of 1:10 and 1:17 million. About 60% of the more than 50 maps covering the region have been published or are ready for publication. The program commenced in 1972. The work has been sponsored mainly by major petroleum exploration companies and notably the USGS which in 1994 accepted responsibility for the production and publication of 15 maps.

The Geological Correlation in East and Southeast Asia Project is sponsored by six industrial associates (petroleum) with the support of nine nations in SE Asia including Japan and China. Much of the work of developing and digitizing databases are done by the staff of CCOP in Thailand. Speden said that the Coordinator reported that the project is "gathering momentum" as the national coordinators become familiar with the standardized procedures for data collection and digitization.

Finally the Circum-Pacific Council is reviewing its mission and activities and plans to issue a statement on the new organization, objectives and functions in the near future. IUGS is to be notified.

J. Aaron reported that the organization has a new President. He indicated that USGS had given insufficient funds to publish the

maps. He felt, however, that it could be useful if the Executive Committee could write a letter to United States Geological Survey (USGS) supporting the publication of these maps.

The Committee ACCEPTED the CPCEMR report, and asked the Bureau to contact USGS concerning support to publication of extremely important maps compiled by contributors from numerous organizations and countries around the region.

4.c.13. European Association of Science Editors (EASE)

SUMMARY1997:

The Sixth General Assembly and Conference of EASE, "Quality in communication: the editor's role" was held in Helsinki, May 25-28 1997, attended by about 260 members and non-members from around the world. A joint workshop was held for journal editors with British Medical Journal at Tunbridge Wells, Kent, 30-31 October 1997.

Membership rose from 890 to 930, in some 46 countries; about 25% of members are from countries outside Europe and about 33% work in the UK. Three issues of EASE's bulletin, European Science Editing, were distributed to members and others. A project for funding courses in scientific writing in Eastern European countries has started. EASE finds suitable presenters, puts them in touch with those requesting such courses, and pays the necessary expenses, including fees. To date courses have been held in Poland, Croatia, Slovenia and Romania.

EASE continues to seek and provide sponsors who pay a special subscription rate on behalf of 50-60 members from countries with currency exchange problems. It also provides grants covering accommodation and registration fees for a number of members who could not otherwise attend its General Assemblies. An EASE Web site <<http://www.ease.org.uki>> has been in existence since November 1995. There is now an active EASE forum at <majordomo@utu.fi>; to join send the message: "subscribe ease-forum".

A. Zharikov (commentator) noted that EASE had three meetings in 1997. No suggestions had been submitted to IUGS.

The Committee ACCEPTED the EASE report.

4.c.14. The Geochemical Society

Chief Accomplishments in 1997:

- *Publication of "Geochimica et Cosmochimica Acta" in 24 issues/year and growth to nearly 6000 printed pages. Sponsorship of symposia and theme sessions at GSA and AGU meetings.*
- *The highly successful 7th V.M. Goldschmidt Conference in Tucson, Arizona, USA.*
- *Reformatting of the Society's newsletter into a glossy, news-magazine format with pictures and articles, and appointment of a new newsletter editor, making this publication the responsibility of someone other than the Secretary of the Society, which will hopefully allow for greater development of content and quality.*

- Institution of a Society website <<http://www.geochemsoc.org>> under the supervision of a full time internet coordinator, with numerous links to other geoscience society home pages. The internet coordinator is also charged with developing web-based educational outreach materials, in collaboration with the Mineralogical Society of America and the Geological Society of America.

- Institution of the Paul W. Gast Lecture Series, jointly with the European Association for Geochemistry, to recognize the achievements of young geochemists. Institution of the Clare C. Patterson Award in environmental geochemistry.

Liu Dun-Yi (commentator) reported that the society is very active and has joint efforts with other organizations. Its chief accomplishments have been increasing the number of issues of *Geochemica* and *Cosmochemica Acta* from 12 to 24 issues per year, a very successful conference in Arizona, USA, and establishment of a www page with links to other organizations. Its budgetary situation is good, with a budget growing every year.

Liu Dun-Yi noted that the 1700-member affiliate continues to be recognized for the Goldschmidt, Clarke, Patterson and Triebis awards. The association has expanded membership services through the newly established Geochemical Society website. In the coming year the affiliate anticipates closer links with the European Association for Geochemistry and with associations in the Pacific Rim.

The Committee ACCEPTED the report of the Geochemical Society.

4.c.15. Geological Society of Africa (GSA)

Chief Accomplishments in 1997:

- i. Participation at the 13th Coll. of African Micropalaeontology, the 3rd Coll. On Stratigraphy and Palaeogeography of the South Atlantic and the 2nd Annual Meeting of the IGCP no. 381 from 8-13 March 1997 in Cameroon.
- ii. Organized an International conference on the geology and mineral resources of Madagascar and the surrounding Gondwana Fragments, August 16-30, 1997 (in collaboration with IGCP 348 & 368).
- iii. Organized the 17th Colloquium of Africa Geology (Theme: Earth Science Education in Africa) in Harare Zimbabwe, September 7-13, 1997.
- iv. Production of the 1st draft of GSA Membership Directory.
- v. Holding of GSA Council and business meetings in Zimbabwe.
- vi. Registrations of the Geological Societies of Cameroon and of Malawi.
- vii. Election of a 4-man Editorial Board of the GSA Newsletter.
- viii. Planning of conferences/workshops for 1999 & 2000.

I. Nyambok (commentator) pointed out that GSA has active programs between its major conferences. He commended this affiliate's involvement in IGCP projects, whose topics were

relevant to Africa, but felt that the Society could strive to strengthen GSA co-ordinated Pan-African research projects. Nyambok noted that the report did not mention that a major publication of the GSA was already in distribution: "Geology within a sustainable Environment: GSA 95 International Conference Proceedings (Nairobi)".

The Committee ACCEPTED the GSA report.

4.c.16. Geological Society of America (GSA)

1996 Report received on 21 January 1997.

R. Brett (commentator) reported that this is an excellent, active and major Society, but they always send reports of the previous year.

Nyambok and Al-Hashimi asked for a deeper discussion of the affiliated organizations' reports, but Brett argued that it is useless because they are such big organizations that IUGS cannot influence them.

The Committee ACCEPTED the 1996 GSA report.

4.c.17. International Association of Engineering Geology and the Environment (IAEG)

Chief Accomplishments in 1997:

Three new National Groups joined the Association in 1997: Georgia, Lithuania and Mongolia. In 1997, the three main activities of the Association were: Publications, Meetings, Commission work.

Publications: *Two issues of the IAEG scientific Bulletin were published (nos. 54 and 55) which included 30 papers from 18 countries (Nigeria 3, Jordan 3, Saudi Arabia 2, Tunisia 1, Senegal 1, Turkey 3, Greece- 4, France 2, Poland 2, Italy 1, Italy-Jordan 1, Canada 1, Brazil France 1, Mexico-France 1, Spain 1, Mexico 1, Lebanon 1, Ghana 1). It is important to point out once more the efforts made by the IAEG to publish papers from developing countries, which are good level papers, but often need an improvement of illustrations, leading to a sensible extra cost. One Newsletter was also published since our last report to IUGS (no. 24).*

Meetings :

The annual meeting of the IAEG took place in Athens, and the International Symposium entitled "Engineering Geology and the Environment" can be considered as a major event in the life of the Association. 640 delegates took part in the Symposium. The IAEG was also very pleased and honoured to welcome the Presidents of several organizations: R. Brett (IUGS), M. Knight (IAH), S. Sakurai (ISRM), M. Jamiolkowski (ISSMFE), S. Pelizza (ITA), E. de Mulder (IUGS Commission COGEOENVIRONMENT). All IAEG Commissions met on the occasion of the Symposium.

A. Zharikov (commentator) remarked that the Association had a change in its name.

R. Brett expressed the opinion that it was an excellent organization. At its meeting in Athens, he had seen participants from several other IUGS bodies. The association is in permanent cooperation with COGEOENVIRONMENT, and in this way provides a good example of how an IUGS affiliate should function.

The Committee ACCEPTED the IAEG report.

4.c.18. International Association of Geomorphologists (IAG)

Chief Accomplishments in 1997:

4th IAG Congress was held in Bologna, 28 August - 3 September. 969 delegates from more than 70 countries attended. Congress activities included plenary sessions, topical sessions and symposia, one-day field trips, pre- and post-conference excursions and field meetings. A large number papers delivered by congress participants was collected to be published in a number of special issues of leading geomorphology journals and book monographs. New Executive Committee was elected to serve for the period 1997-2001.

F. Hervé (commentator) said that IAG is working in connection with developing countries and is a healthy organization.

The Committee ACCEPTED the IAG report.

4.c.19. International Association of Geochemistry and Cosmochemistry (IAGC)

Chief Accomplishments in 1997:

IAGC is making its presence felt in the world by the activities of its Working Groups and by the continuing growth of the journal APPLIED GEOCHEMISTRY. The page budget for 1998 has been raised to 1000 pages, permitting the publication of eight issues for the first time in its history. In addition, the scope of the journal has been modified to emphasize environmental geochemistry in the broadest sense of that term, including both natural and anthropogenic phenomena. However, all applications of chemical and isotopic techniques to mineralogical, aqueous, and atmospheric phenomena continue to be included in the scope of the journal.

In order to stimulate research in the subject area of environmental geochemistry, the IAGC sponsored two technical sessions at the recently held annual meeting of the Geological Society of America in Salt Lake City. These sessions attracted excellent presentations in front of large audiences.

Liu Dun-Yi (commentator) described IAGC as an active IUGS affiliate that plans to place greater emphasis on environmental geochemistry. The affiliate also plans to increase frequency of its newsletter, to expand its Journal "Applied Chemistry", and to seek more members. The association will sponsor several

meetings in 1998 including 9th Symposium on Water-Rock Interaction, the 7th International Kimberlite Conference and the 17th International Mineralogical Association (IMA) meeting.

Liu Dun-Yi asked why IUGS has two associations in the same field. R. Brett explained that IUGS had hoped that the two would cooperate with one another, and this is happening. Brett suggested that the affiliated organizations should be asked to combine some meetings and establish links with the IUGS Working Group on Continental Geochemical Baselines.

The Committee ACCEPTED the IAGC report, recommending more cooperation between this Association and the Working Group on Continental Geochemical Baselines.

4.c.20. International Association of the Genesis of Ore Deposits (IAGOD)

Chief Accomplishments in 1997:

- *IAGOD CTOD WG5 (Remote Sensing Methods) held a workshop "Remote sensing models of large and giant Au lode type deposits - correlation with Bamskoc Au deposit in Eastern Siberia, Russia" (January 1997).*
- *Mongolian IAGOD Group organized the international scientific conference "Problems of ecology and Mining of Mongolia" (5-9 May, 1997).*
- *IAGOD WGOM co-organized the Frank M. Vokes 70 Year Anniversary Symposium "Formation and metamorphism of massive sulphides", Trondheim, Norway, March, 1997. IAGOD-WGTT cooperates tightly with the IGCP Project 373.*
- *IAGOD co-sponsored the Betekhtin symposium, Moscow. XIth Symposium "On Mineral Deposits Associated with Placers and Weathered Rocks", Moscow, (September 1997) and 3rd Conference "Paleogeographic and Geodynamic Environment of Volcanogenic-Sedimentary Ore Formation" (September 1998), Miass city, Russia, were also co-sponsored by IAGOD.*
- *The first version of the IAGOD www home site was completed.*
- *New IAGOD National Group of Tajikistan was established and joined IAGOD.*
- *The 10th IAGOD Symposium planned to be held in Broken Hill, Australia, August 1998, has been cancelled. The Symposium will probably be organized as the Joint SGA-IAGOD Symposium in London in 1999.*
- *The annual business meeting of the Czech and Slovak National IAGOD Groups took place in Magurka, Slovak Republic.*

Z. Johan (commentator) referred to the annual report, noting that the association has more than 1000 members in more than 60 countries and is extremely active, participating in the IUGS-UNESCO Deposit Modelling Program and is related to some IGCP projects. It publishes a newsletter. G. Gaál felt it was crucial that the 10th IAGOD Symposium takes place in 1999.

The Committee ACCEPTED the IAGOD report.

4.c.21. International Association of Hydrogeologists (IAH)

SUMMARY 1997:

“Hydrogeology Journal” has now completed its 5th year of publication with the largest number of pages yet. In December 1997 IAH signed a publishing contract with Springer who will now take over the journal from the Heise Company in 1998. The number of pages will be increased to 600 per year and, from 1999, will increase frequency of the publication to six issues per year. The Journal continues to be supported by the Geological Society of America.

The IAH 1997 Congress was held in Nottingham UK and was one of its most successful congresses ever. The subject was Groundwater in the Urban Environment. It attracted worldwide attendance and support from international funding agencies.

A major part of the IAH mission has remained the promotion of hydrogeology in developing nations. We do this, not only by maintaining a very low membership fee but by running a sponsored membership scheme, by offering financial support through our Burdon Fund, by collaborating in projects in the International Hydrogeological Program of UNESCO and by support to congresses and other meetings. Membership in Latin America has shown strong growth with new and growing Chapters in Argentina, Mexico and Chile. Most recently new Chapters have been formed in Georgia and Vietnam.

The IAH web page <<http://www.ngu.no/iah>>, established with the support of the Geological Survey of Norway, continues to attract considerable interest and has helped the promotion of the organization and an increase in membership.

I. Nyambok (commentator) reported on the plans of IAH to promote corporate membership growth and activities in developing countries, focusing on Africa and Far East Asia. As well, they hope to extend the partnership with its sister organizations, in particular, IAEG and COGEOENVIRONMENT.

The Committee ACCEPTED the IAH report.

4.c.22. International Association of Mathematical Geology (IAMG)

SUMMARY 1997:

The organization held its Third IAMG Meeting, IAMG'97, 18 - 27 September 1997, in Barcelona, Spain. Nine workshops were conducted 18 - 20 September for 55 attendees. The sessions were held 22 - 26 September; there were 224 attendees and more than 150 papers and posters were presented. An excursion to Andorra was held on 27 September.

IAMG sponsored two other meetings during 1997:

-Mining Příbram Symposium and Sixth International Symposium on the Application of Mathematical Methods and Computers in Mining, Geology, and Metallurgy, 6 - 10 October, Prague, Czech Republic.

-Annual Meeting of the Geologische Vereinigung, 27 February - 1 March, Juelich, Germany.

A Publications Committee, chaired by F. P. Agterberg, was established. Its main goals are to safeguard royalty income, foster communications between the IAMG Editors-in-Chief, be aware of trends in electronic publishing, and to improve the scope and quality of the journals.

The Education Committee, chaired by John Tipper, has established a series of publications: Studies for Students. These papers will not be published in IAMG journals, but in journals that are related to the subject matter of the applications. Agreements have been reached with thirteen journals. One article is currently in press and several others are in review.

Elsevier has put "Computers & Geosciences Online", an electronic version of the journal, online. The journal will still be printed, but the electronic version has several valuable features, including color figures in abundance, and hotlinks to abstracts of cited papers.

V. Zharikov (commentator) reported the association to be very active with three meetings in 1997 and three journals. Its journal "Computer and Geoscience" has now an electronic version.

R. Brett noted that there is a worry that the ratio of mathematicians to geologists is high in this association, and that it needs a larger proportion of geologists. Boriani reported that he had received a letter from the Italian organizers of the IAMG meeting, asking for help from IUGS to provide geological input to this organization, which seems to be drifting towards pure mathematics. He proposed to write to both COGEOINFO and the Association to suggest more interaction.

The Committee ACCEPTED the IAMG report, recommending more geological interaction in the Association.

4.c.23. International Association of Sedimentologists (IAS)

Accomplishments in 1997:

IAS has held its yearly Regional Meeting in Heidelberg, Germany, from September 2 to 4. 577 participants from 47 countries attended. Thirteen field trips were run before and after the Meeting, and 5 short-courses were organized. Special sessions for IGCP and GSGP programs took place.

The 1st IAS/SEPM Meeting on Environmental Sedimentology was held in Venice, Italy, from October 27 to 29. In 5 workshops, 75 selected participants defined the state-of-the-art and future research needs in the field of Environmental Sedimentology in the Coastal Zone.

IAS has sponsored or co-sponsored three meetings in 1997: Microbial Mediation in Carbonate Diagenesis (Chichillianne, France), the 6th International Conference on Fluvial Sedimentology (Cape Town, South Africa), and the 1st Latin American Congress of Sedimentology (Margarita Island, Venezuela).

IAS published 6 issues of its journal Sedimentology, comprising 1150 pages. Three new Special Publications are in preparation. Furthermore, a new series of Field Guides has been started, and the first volume is being prepared. IAS continues to sponsor the journal Basin Research.

The journal Sedimentology is accompanied by a Newsletter where the IAS Bureau can make its announcements, the IAS National Correspondents report on sedimentological activities in their country, reports on past meetings are given, and coming meetings are announced. The

IAS Homepage has been newly structured and is regularly accessed (over 1000 hits in October).

The IAS friendship scheme for scientists and libraries in less-developed countries continues. Some 150 individuals and 30 libraries benefit from it. IAS membership has stabilized at around 2000.

W. Al-Hashimi (commentator) referred to the above summary of the report, noting that the membership is relatively constant at around 2000. He recommended that the IAS report be accepted.

The Committee ACCEPTED the IAS report.

4.c.24. International Association of Structural/Tectonic Geologists (IASTG)

SUMMARY 1997:

The IASTG, launched in 1990, encourages international communication among structural and tectonic geologists. Membership is open, without subscription, and current enrollments stand at 1165. Communication among IASTG members is achieved by the "International Newsletters", published in the "Journal of Structural Geology", bringing news about activities in structural geology and tectonics from all over the world. The Newsletter is open to contributions from everyone, and is currently twice yearly.

This International Newsletter" is also available on the World Wide Web through the IASTG Homepage: <<http://www.man.ac.uk/Geology/IASTG>>. Work is underway to produce a new printed IASTG Directory for 1998.

F. Hervé (commentator) reported the association to be active. He mentioned that the scientific level of its journal is very high and added that the affiliate has 1200 members in national groups, many from developing countries.

The Committee ACCEPTED the IASTG report.

4.c.25. International Federation of Palynological Societies (IFPS)

Chief Accomplishments in 1997:

*Election of Vice-Presidents: Harley, Piasecki, Romero Garcia
Publication of PALYNOS Volumes 20.1, 20.2.,
Planning for IPC-10, year 2000, Nanjing, China
Collection of dues and membership directories from affiliate societies
Updating of World Directory of Palynologists
Maintenance of Web Page <<http://geo.arizona.edu/palynology/ifps.html>>*

Goals for 1998:

*Publication of PALYNOS Volume 21
Planning for IPC-10, year 2000, Nanjing, China
Collection of dues and membership directories from affiliate societies
Updating of World Directory of Palynologists
Maintenance of Web Page*

I. Speden (commentator) noted that the Federation's activity, although routine, was good, and recommended that they cooperate more with other associations. R. Brett agreed with Speden's comments, but mentioned that IFPS has strong links to INQUA. The Federation is also affiliated with the International Union of Biological Sciences.

The Committee ACCEPTED the IFPS report.

4.c.26. International Mineralogical Association (IMA)

SUMMARY 1997:

The IMA Commission on Crystal Growth of Minerals prepared an edition (408 pages) of the Lecture Notes of the Short Course on 'Crystal Growth in Earth Sciences'. The IMA Commission on Ore Mineralogy held a Short Course in S. Mamede de Infesta (Portugal) on September 8 - 10 (41 registered scientists from ten countries), followed by a field trip to 'Somincor' multi-metal mines at Neves-Corvo (September 11- 12). The Amphibole Report and 'New Minerals Recently Approved, 1996 Proposals' (Commission on New Minerals and Mineral Names) have been published in several journals; the Mica Report has been submitted for publication. The IMA Home Page has been opened <<http://www.dst.unipi/ima>>. The preparation of the 17th General Meeting (Toronto, Canada; August 9-14, 1997) is going on; the second circular, presenting the whole scientific program, has been distributed in June 1997.

Z. Johan (commentator) reported the association to be very active with nine commissions, five working groups and a lot of cooperation among other IUGS related organizations, IAVCEI, IAGOD and IGCP projects. The commission on crystal growth is publishing a book. The association has both a history and a teaching commission, which is sponsoring a meeting in Budapest. He suggested a cooperation with INHIGEO, and its commission on new minerals and mineral names should cooperate with CSP. It is planning a short course on fluid inclusions in Vienna in 1998 and organizing an international meeting in Canada for which it has received an ICSU grant.

The Committee ACCEPTED the IMA report and CONGRATULATED with the ICSU grant through IUGS.

4.c.27. International Palaeontological Association (IPA)

W. Al-Hashimi (commentator) regretted that no report had been received, noting that this is also the only affiliated organization that did not submit an annual report for 1997.

The Committee REGRETTED that no report had been received from IPA.

4.c.28. International Permafrost Association (IPA)

SUMMARY 1997:

The year's activities were highlighted by participation in the Fourth International Conference on Geomorphology in Bologna, Italy, a pre-conference field trip in the Alps on permafrost and slope stability, and participation in several conferences in Russia on permafrost (Pushchino) and cryopedology (Syktyvkar). The IPA Executive Committee met at Pushchino in April and in Bologna in September.

The Canadian organizers continued planning for the Seventh International Conference on Permafrost to be held in Yellowknife, Canada, 23-27 June 1998. Over 450 abstracts were received and at present 260 papers are in the review process. Several field trips are planned. The Final Circular was mailed in October 1997.

The Circum-Arctic Permafrost and Ground Ice map (1:10,000,000) was published by the U.S. Geological Survey. The Data and Information Working Group, under the auspices of the WDC-A for Glaciology in Boulder, Colorado, is preparing a CD ROM for the Yellowknife Conference. The CD, a product of the Global Geocryological Database (GGD), will contain a cumulative bibliography of literature since 1978, a Russian map bibliography, digital version of several permafrost maps, the 400 term, 12 language permafrost and ground ice glossary, and a large number of representative data sets from IPA Members of active layer and permafrost data.

The Mountain Permafrost WG organized a field trip in the Alps attended by 50 participants, a one-day workshop on mapping and monitoring, and a session at the Bologna conference. A guidebook and abstract volume are available. The Cryosols WG met in Syktyvkar during the Cryopedology conference in August and reviewed progress on terminology, mapping and correlation and plans for the international permafrost and soils conferences in 1998. Under the direction of the Global Change and Permafrost WG, the Circumpolar Active Layer Monitoring (CALM) network was expanded to 70 sites with eleven participating countries. The EC has recently funded a three-year project Permafrost and Climate in Europe (PACE) which involves six European countries and Svalbard. The Periglacial Processes and Environment WG revised plans for preparation of the manual on field measurements.

V. Zharikov (commentator) gave a brief outline of the annual report, noting that this association is active. W. Fyfe added that it is also starting to look at the links with meteorology.

The Committee ACCEPTED the IPA report.

4.c.29. International Society for Rock Mechanics (ISRM)

Chief Accomplishments in 1997:

- *Holding of the ISRM International Symposium NYRocks '97, New York NY, USA, July 1997*
- *Holding of the annual meetings in New York NY, USA (Board, Council and Commission)*
- *Award of the Rocha Medal 1997*
- *Publication of three issues of the "ISRM News Journal"*
- *Publication of Commission Reports*

I. Nyambok (commentator) reported on the Society's activities in 1997, noting that over the last five years, ISRM has progressively intensified its activities and has expanded its membership. The plans for 1998 are to hold the Annual Board, Council and Commission meetings in Cancun, Mexico; publish three

issues of the News Journal; and also publish reports resulting from the Commissions' activities. The Society anticipates a further increase in membership by improving the contacts with eastern European and Asian countries.

The Committee ACCEPTED the ISRM report.

4.c.30. International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE)

SUMMARY 1997:

At the ISSMFE Council Meeting in September it was agreed that the name of the Society should be changed to the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE). In 1997 ten ISSMFE/ISSMGE Conferences or affiliated conferences were held in various countries, and about the same number will be held in 1998. A special highlight for 1998 will be the 3rd International Congress on Environmental Geotechnics in Lisbon in September.

In 1997 the Society continued to distribute a "model" set of text books, free of charge, to undergraduate teaching institutions in developing countries. This scheme is now completed. ISSMGE has about 17 000 members in 70 Member Societies world-wide. The possibility of ISSMGE setting up a "Heritage Museum" is under consideration.

I. Nyambok (commentator) felt that the Society's report was rather brief but nonetheless it has remained active with plans for several major conferences within the next four years.

The Committee ACCEPTED the ISSMGE report.

4.c.31. International Union for Quaternary Research (INQUA)

Chief accomplishments in 1997:

INQUA has eleven scientific Commissions and two inter-congress Committees. The main INQUA activities are connected to these thirteen scientific bodies. It was decided at the INQUA congress in Berlin in August 1995 that the activities of these bodies should be project oriented. Guidelines for submitting project proposals were distributed in January, and in March 1997 around 9 new projects were approved. Around 20 of the 30 projects that were accepted in 1996 continued in 1997. The project activities will be evaluated by the INQUA Executive Committee's vice-presidents at the next Executive Committee meeting in 1998.

Several of the Scientific commissions and committees have arranged workshops and meetings in 1997. Some of the meetings have been held in co-operation with other organizations.

Planning of the IV INQUA congress (1999): *The South African Congress Committee will distribute the second circular congress circular in December 1997. The Program Committee is now compiling a list of symposia and planning the first days program which will be focused on the main topic of the congress: "The Environmental Background to Hominid Evolution in Africa".*

I. Speden (commentator) remarked that under its new project system, the Union aims to allocate more money to projects and less to administration, as well as encouraging the involvement of young scientists in project leadership and for cooperation with developing countries. He also noted that INQUA has established a permanent secretariat in the Netherlands and is aiming to transact all business by e-mail instead of hard copy.

Speden commented that at least four of the INQUA commissions are multidisciplinary in scope and should be asked to work more closely with IUGS Commissions. Duplication is a concern to IUGS.

The Committee ACCEPTED the INQUA report, suggesting more cooperation with IUGS Commissions.

4.c.32. The Meteoritical Society

Chief Accomplishments in 1997:

Award of the Leonard and Barringer medals to Dr. Ernst Zinner and Professor Tom Ahrens, respectively. Presentation of the Nier Prize for young scientists (under 35) to Dr. T.J. McCoy.

The Society sponsors its own journal, "Meteoritics and Planetary Sciences" (MAPS; formerly "Meteoritics"), published bi-monthly, and also (jointly with the Geochemical Society) the journal "Geochimica Cosmochimica Acta (GCA)", published twice monthly.

R. Brett (commentator) reported the Society to be well and very much alive. It has an excellent journal. It should, nevertheless, be asked to have more cooperation with IUGS Commission on Comparative Planetology.

The Committee ACCEPTED the Meteoritical Society report.

4.c.33. Society of Economic Geologists Inc. (SEG)

SUMMARY 1997:

SEG does not directly fund research projects, other than through student research grants, but does support symposia, conferences, etc., at which results are reported.

In addition to presenting symposia, theme sessions, and field trips at annual meetings of the Geological Society of America, Society for Mining, Metallurgy and Exploration, and the Northwest Mining Association, SEG has sponsored a variety of international symposia and field conferences. SEG was the lead sponsor for the Neves Corvo Field Conference on volcanogenic massive sulfide deposits held in Lisbon, Portugal in May, 1997. Two SEG-sponsored field conferences were held during October, 1997 - one on Carlin-trend Gold Deposits in Elko, Nevada with field visits to Carlin-trend ore deposits, and the other on the Geology and Ore Deposits of the Oquirrh and Wasatch Mountains in Salt Lake City, Utah, with field visits to Bingham Canyon (porphyry copper deposit) and nearby mineralized areas. A five-day, post-meeting field trip on New Mines and Discoveries in Mexico, organized and sponsored by

SEG, was held in conjunction with the XVII World Mining Congress and XXII Convention of the Association of Mining Engineers, Metallurgists and Geologists of Mexico, in Acapulco, Mexico. SEG co-sponsored meetings/symposia at the 39th Brazilian Geological Congress, at the VII Congreso Geológico Chileno, at the IX Congreso Peruano de Geología, at the 6th International Conference on Fluvial Sedimentology (Capetown), and a symposium at the SGA meeting in Turku, Finland (August, 1997).

G. Gaál (commentator) gave a brief outline of the SEG achievements, noting that this is a very active and prestigious society.

The Committee ACCEPTED the SEG report.

4.c.34. Society for Geology Applied to Mineral Deposits (SGA)

Chief Accomplishments in 1997:

Scientific Meetings:

- 4th Biennial SGA Meeting, Turku, Finland, August (417 participants)
- Workshop "Use of wall-rock alteration and primary geochemical dispersion in mesothermal gold exploration", Turku, August.
- Short Course "Application of geochronology and isotope geochemistry to ore deposits", Turku, August.

Z. Johan (commentator) reported on a worldwide society with an increasing number of members, a successful journal and a frequently visited home page. It has successful cooperation with other societies and organized the largest mineralogical meeting in Europe in 1997. It will organize the 5th Biennial SGA Meeting in London, England in August 1999.

The Committee ACCEPTED the SGA report.

4.c.35. Society of Sedimentary Geology (SEPM)

R. Brett (commentator) acknowledged the receipt of the Society's report. He pointed out that SEPM is a relatively new affiliate that has submitted its report for the first time since its affiliation in Beijing. It is a healthy organization with a full time Executive Director and over 1000 members.

The Committee ACCEPTED the SEPM report.

4.d. WORKING GROUPS

R. Brett explained that the IUGS Working Groups are not regular bodies described in the Statutes and Bye-laws; but are usually groups not big enough to be commissions or affiliated organizations. A working group may, however, be formed when a geological problem arises that is worth studying. Assuming that

satisfactory progress is made, the working group will be dissolved when the task is completed.

4.d.1. IUGS Working Group on World Landslide Inventory

SUMMARY 1997:

The Working Group met during the 14th ISSMFE in Hamburg for useful exchanges of views. The Committee on Assessment of Risk of Landsliding convened a 3-day Workshop in Honolulu, Hawaii, USA for invited experts from countries largely around the Pacific Rim. The Proceedings of the Workshop have been published (Cruden, Fell, 1997). Chairmen of the Committees on Damage (H. Einstein) and Rapid Landslide Motion (K. Sassa) make their contributions under the Committee Chairman (R. Fell).

In 1998, the working group plans to 1) Develop and submit for publication a set of definitions for use in landslide risk assessment. 2) Review, revise and submit for publication a suggested method for reporting landslide remedial measures.

A. Boriani (commentator) reported that the Working Group is mildly active. In principle this IUGS Working Group is important because of the subject matter: It prepares a field manual for landslides. Boriani described the group as behaving more like a commission than like a working group, and suggested that they present a mission statement with some milestones and deadlines.

R. Brett presented the history of the working group and suggested that it be reviewed by ABRD. He agreed that it should be told to establish milestones for its activities and suggested that Boriani inform them that they have three to four years to complete their job and after that they need to reformulate their task.

The Committee ACCEPTED the report of the Working Group on World Landslide Inventory, recommending it to establish a mission statement as mentioned above.

4.d.2. IUGS Working Group on Global Geosites

Achievements 1996/97

Advertised project - Episodes paper appeared early 1997. Defined guiding criteria for Geosites selection Circulated methodology - major paper published in proceedings of Rome 2nd International Symposium is being used as the template for national work. Defined recording categories for inventory and database - discussed at Tallinn June workshop, now with contributors for testing and refinement.

Strengthened links and identified partners in individual countries. Important national meetings, in particular, in Greece, Spain, Italy and Germany have involved Geosites inventory discussions. Made first efforts in Africa. Contact is established in N. America and Australia.

Under this agenda item, A. Boriani (commentator) first reported that the Bureau is discussing a new proposal for Geosites and Geoparks Conservation Network to UNESCO. He stressed the importance of the Executive, once again, to decide and to clearly express IUGS' commitment on the Geosites issue, because there is a lot of pressure on IUGS from many initiatives connected to geosites. The UNESCO program on the geosite network could subtract funds from IUGS scientific projects. Geosites are important for the geological surveys because the area for surveys in many countries is increasingly restricted and geosites are therefore an opportunity. However, little science is involved. He expressed the opinion that since IUGS is a scientific union it can give scientific support, but should otherwise have a limited commitment.

Boriani proposed to inform UNESCO about that the IUGS spokesman is Bill Wimbledon, Chairman of the Working Group on Global Geosites. He then reported the work of the group to be good, but that it also behaves like a commission and the future role of this group has to be decided.

I. Speden agreed that it should be made clear to UNESCO that IUGS will provide scientific support only. E. Dudich was of the opinion that such cooperation with UNESCO could increase the visibility of IUGS. Boriani replied that he is not sure it is worth while to involve IUGS in a project to establish a network of geosites and he questioned whether it is a task of the UNESCO Division of Earth Sciences to establish a lower rank of geosites than World Heritage. I. Nyambok said that the practice is that the member countries suggest their selected geosites to UNESCO for approval, not the other way around. Dudich mentioned that some countries are pleased about having sites ratified by UNESCO.

Boriani asked for the Executive Committee's opinion on how extensive the IUGS involvement in geosites should be and whether the Working Group's activities are enough.

Speden and Nyambok agreed that the IUGS commitment to scientific support through the Working Group should be limited. Brett and Johan stressed their concern that this geosite program uses UNESCO funds that could go to other programs.

The Committee ACCEPTED the report of the Working Group on Global Geosites, AGREEING that this Group should be the spokesman for IUGS in geosites matters.

4.d.3. IUGS Working Group on Continental Geochemical Baselines

Chief Accomplishments in 1997:

- *Russia tested GRN sampling and sample planning within the Lake Baikal area.*
- *FOREGS/IGCP 360 meeting in Portugal results in revision of draft field sampling manual. Minutes of the meetings available from Dr. Timo Tarvainen. (FOREGS=Forum of European Geological Surveys.)*
- *At the ISEG in Jerusalem, two IGCP 360 workshops on "Geochemical Mapping Methods" and "Applications of Geochemical Mapping" were presented by Prof. R. Salminen and Prof. P. Simpson respectively.*
- *The FOREGS Field workshop in Slovakia involved detailed demonstrations of the field methods to be adopted in Europe. The final version of the European field manual was agreed.*
- *The GeoAnalysis conference, Colorado, USA hosted a meeting of the Analytical Committee.*
- *Exploration '97, Toronto, Canada hosted an IGCP 360 presentation.*
- *The ISEG, Colorado, USA hosted the final meeting of IGCP 360. The Field Manual was finalised and is expected to be published early in 1998.*

Liu Dun-Yi (commentator) reported that the group is working well.

W. S. Fyfe added that it has submitted a very good summary of J. Plant's sub-group and Brett reported that it has been commended by the UN for being a very good example of how to use science for environmental problems.

The Committee ACCEPTED the report of the Working Group on Continental Geochemical Baselines.

4.d.4. IUGS Working Group on Geoscience Education and Training

W.S. Fyfe (commentator) stated that he believed in science, but not geoscience education. He reported a meeting in Toronto, Canada with over 1000 invited Canadian schoolteachers, which had worked very well. The group had approached the British Council for support on how to get science information and education out into the world. Fyfe promised to write a report on the subject for *Episodes*. The *Episodes* Secretariat had agreed to distribute its journal along with 2000 copies of a poster that had been tested in schools for 10 - 12 year old students. He further reported on some trans-disciplinary educational programs, which have been going on in some universities, where totally integrated courses such as "The Sea" had had great success among students.

R. Brett proposed to have affiliates from all over the world involved in this issue.

Speden pointed out that this is an ICSU task and he recommended asking Stuyck-Taillandier what ICSU is doing. The fact that

education is organized so differently in every country complicates the task. In response to a question from Nyambok, Fyfe responded that the integrated courses were at a university level and added that another course is planned on energy.

The Committee ACCEPTED the report of the Working Group on Geoscience Education and Training.

4.d.5. IUGS Working Group on Earth Processes and Global Changes (CLIP) (Climates of the Past)

SUMMARY 1997:

Since 1993, CLIP regularly grew into a very cohesive group of about 50 hard-working active scientists, avoiding too ambitious objectives (non-feasible within 3 or 5 years). The last meeting allowed discussion of new results (coral growth and dating, non-orbital climatic events, neotectonic information from observed sea level changes..)by international members.

In September/October the annual general meeting was held at Cairns and at the Institute of Marine Sciences at Townsville, Australia.

Specific CLIMEX (Climate Extremes group): The aim defined in October 1995 was to map the Paleoenvironmental state of the world during the last coldest and warmest phases. Meetings held:

1-3 April in Cassis, 3-4 October in Townsville, 2-3 December in Paris. The manuscript are now ready for print. The printing will be funded by ANDRA and CCGM. The digitized maps should be presented at the Rio de Janeiro IGC in 2000.

Professor A. Chivas will take over the leadership of CLIP.

I. Speden (commentator) reported that the program is devoted to reconstructing variations in the Earth's climate over the past 150 000 years as based on the geological record and to testing climate models. CLIP has now a cohesive group of 50 active scientists who contribute to specific short term tasks and target is rapid publication. Speden mentioned the Climate Extremes group and that the French INQUA Committee is preparing two paleomaps of France for the same intervals at 1:1 M.

I. Nyambok will ask the scientific committee in Nairobi to highlight the role of IUGS on the global change issue.

R. Brett reminded the Executive Committee of the problem of CLIP being a joint program with UNESCO and that it was decided last year to finalize the program, although IUGS decided to keep it on for another year. Following the decision of the Committee of last year, CLIP is now terminated.

Speden would like to see IUGS involved in paleoclimate studies. Since there now is a change in the CLIP leadership, it may be the right time to take a decision.

Boriani proposed that if IUGS closes this program, it should launch a call for research in the field of global change. Caldwell reminded the Executive Committee that IGCP has at least four projects that can represent IUGS in the field of climates of the past.

The Committee ACCEPTED the CLIP report, but according to the Committee decision last year, it decided to terminate the program. N. Petit-Maire, the CLIP leader, was THANKED and COMMENDED for her initiative and work during the previous years.

5. REPORTS ON CO-OPERATIVE ENTERPRISES

5.a. IUGS/UNESCO International Geological Correlation Program (IGCP)

R. Brett (commentator) stated that this is a very good program, the best cooperative program IUGS is involved in. He said that it is not necessary for the Committee to discuss the science of the Program, but would like to draw the attention to the financial problems. For many years the financial situation of IGCP had been stable, but in 1997, and also this year, the program is facing a crisis. Brett explained the background, adding that the UK has again joined UNESCO, but that this has resulted in no new money because member countries reduced their dues accordingly. Even if IUGS attempted to control the financial issue there is a continuous change of orientation in UNESCO which has made it difficult to cooperate. The lack of control of money that is allocated to decentralized projects and transmitted to regional offices is also a problem. In 1997, the financial situation was very confusing for some of the Project Leaders who had received an allocation letter from IGCP, but did not know whether they would receive the money. This problem was ultimately solved.

A discussion followed on the UNESCO-IUGS relationship.

A. Boriani informed the Committee that the IGCP Scientific Board had four new members nominated in 1997: Edward Robinson (Jamaica) for Working Group 1, Isabelle Niang-Diop (Senegal) and Nozar Samani (Iran) for Working Group 2, and Petr Jakes (Czech Republic) for Working Group 3.

The Committee REGRETTED that the financial situation was still difficult and confirmed its complete support to the IGCP program.

5.b. IUGS/UNESCO Program on Geological Applications of Remote Sensing (GARS)

SUMMARY 1997:

During 1997 the GARS-Program has been presented at the following occasions and institutions:

Robert Missotten; GARS Secretary:

- 1) *EARSeL Council Meeting, Paris, 17.1.1997*
- 2) *European Union, DGXII, Working Group on Natural Hazards, Brussels, 12.5.1997*
- 3) *UN-Office of Outer Space Affairs, Interagency Co-ordination Meeting, New York, 29.5.1997*

Siefko Slob:

ERIM 12th International Conference and Workshops: Applied Geologic Remote Sensing, Denver, Col. USA, 17 - 19 November 1997

Dietrich Bannert, Chairman:

- 1) *2nd European Space Congress, Bremen, Germany, 14-17.5.1997*
- 2) *Forum of European Geological Surveys (FOREGS), Annual Meeting of Working Group on Remote Sensing, Prague, Czech Republic, 6-8.10.1997*
- 3) *8th International Symposium on the Applications of Remote Sensing to Land Use and its Environmental Impact, Damascus, Syria, 1-4.12.1997*

Meetings:

Steering Committee and Board:

February 1, 1997 at UNESCO-Earth Sciences Division, Paris,

September 26, 1997 at ITC, Enschede, the Netherlands

Workshops:

First GARS-Asia Science Workshop - September 25 - 26, 1997 at ITC, Enschede, the Netherlands.

F. Hervé (commentator) declared the GARS report to be clear and informative. He reported that they had held a good science workshop in Asia and that several publications were in press. The program's funding has come from participating institutions. In February 1998, GARS will meet with the IUGS Bureau in Paris, where it will present IUGS some input on future development.

R. Brett reported that IUGS has asked that a review be carried out with UNESCO because IUGS has the impression that this activity could live without IUGS involvement. E. Dudich said that it is a rather closed club, but F. Hervé argued that there is an attempt of opening the group to other partners. Brett thought that the new Chairman could be a key person for future improvement.

A. Boriani recalled that two meetings ago, the Bureau decided to have GARS reviewed because it was convinced that it is not fully an international program. GARS is composed of only very few organizations, such as the geological surveys of Germany, the

Netherlands, and the U.K., as well as the Belgian Royal Museum and some scientists from the University of Paris. He further said that UNESCO has proposed an internal review, but IUGS wants an external one that would cost money. UNESCO has offered to bear the expenses for one person on the review panel, while IUGS believes that at least four persons would be necessary.

Boriani also repeated the comments given by H. Schalke about the Enschede meeting in the Netherlands, in which he stated that GARS should have a written mission. He also said GARS may develop towards other external fields and suggested a review to give guidance. I. Speden questioned having the program reoriented if it keeps the same leadership. Brett said that it needs to broaden its scientific area and also the people involved.

The Committee ACCEPTED the GARS report with the above comments.

5.c. IUGS-UNESCO Program on Mineral and Energy Deposit Modelling (DMP)

Achievements in 1997:

The DMP Steering Committee met immediately following the IGCP Scientific Committee meetings at UNESCO Paris in 1997. At the request of Dr. Robin Brett, the Steering Committee agreed to consider an external review of the Program. A decision is pending.

A workshop on Palaeozoic-age granite-related gold, copper, molybdenum, tungsten and rare earth element deposits and epithermal gold deposits was held in Kazakhstan and Kirgizistan from August 31 to September 14, 1997, organized by Prof. Gabor Gaál. A major objective of this and other workshops was to instruct participants in the need to separate objective field observations from subsequent interpretations necessary for the formulation of deposit models and to basic scientific investigations in general.

A NATO Advanced Study Institute (ASI) workshop titled "Deposit and Geoenvironmental Models at the Interface: Resource Exploitation-Environmental Security for Land Use Management" is planned for late summer 1998. It is helping the program to meet its mandate of examining not only deposit models but also resource assessment and environmental amelioration techniques.

The 1998 Steering Committee meeting will take place in Paris on February 5 and 6.

G. Gaál (commentator) said that the program had been designed to provide help to most developing countries for problems related to exploitation of earth resources, taking into account the environmental consequences. He reported that the program had organized a meeting in Kazakhstan, with 100 participants and a field trip with 40 participants. The program has obtained an USD 85.000 grant for a NATO Advanced Study Institute for 1998. This meeting will also be quite large. DMP is now looking for more funding from other external sources to support participation

from eastern and developing countries. The DMP steering committee will meet with the IUGS Bureau in Paris in early February this year.

Z. Johan recalled that he had proposed to move the activities of the DMP to West Africa and South America and argued that this would be the right moment to do so, before the next IGC. R. Brett replied that the program has already had some activities in South America and Africa.

The Committee ACCEPTED the DMP report.

5.d. Circum Atlantic Project (CAP)

R. Brett (commentator) read a letter from J. Reinemund announcing that the project is alive again. CAP, which was started in 1989 at the request of IUGS and cooperation with CGMW, was initially conceived as a mechanism for compiling and issuing hard-copy geoscience and resources maps and reports modelled after the Circum-Pacific Map Project. It became clear that this would be increasingly costly and cumbersome, and in 1994 it was decided that CAP should be reoriented to take advantage of the rapid advance of computer technology. It was also decided that the IUGS commitment to the Project should be suspended until future strategy and plans had been developed.

It was noted that the CAP members want to give a report at the Rio IGC, and they have prepared a proposal for a U.S. National Science Foundation grant.

Following a brief discussion, it was decided that Brett should inform Reinemund that the Committee decision on an eventual continuation of CAP will depend upon whether or not it receives the grant referred. In case of revival, CAP will be turned into a Working Group and their situation will be reviewed in a year.

The Committee DECIDED that a reviving of CAP as an IUGS body is pending the support it will receive from other sources.

6. INTERNATIONAL GEOLOGICAL CONGRESS (IGC)

6.a. 31st IGC - Rio de Janeiro - Status of planning

R. Brett introduced the Secretary General of the 31st IGC in Brazil, Carlos Oiti Berbert, and the IGC representatives Dr. Campos and Luiz A. Gravatá.

C. Berbert reported that this is the first time the IGC will be held in South America. It will be held from August 6-17, 2000 in Rio de Janeiro. It will be based on a consortium of all the South American countries. After the Brazilian proposal for IGC had been approved in Beijing, an Organizing Committee had been established. The theme of the Congress is: Geology and Sustainable Development: A Challenge for the Third Millennium. The Congress is supported by several big societies in Brazil, by Ministries, and all the societies in the geological community. Berbert went through the facilities of the Congress center with a hall that can take 5,000 people and explained the structure of the development of the Congress itself, which introduces some important and modern innovations, with significant weight given to the Poster Sessions, 50 Special Symposia, and three big Colloquia.

Berbert commented that a problem is to acquire an updated mailing list for distribution of the First Circular. Zhang Hongren, Secretary General of the last IGC, said he would provide a mailing list, but it would not be updated. The IUGS Secretariat will provide an updated list of all National Committees and other IUGS bodies. A. Green will take care of the addresses in Switzerland, W. Janoschek in Austria and I. Speden in New Zealand. Boriani proposed that IGC take advantage of the new directory of the European Mineralogical Union (EMU), which he will forward to the organizers.

Concerning the administrative meetings of the IUGS bodies during the Congress, Boriani said that he will write to the bodies in September 1998, asking them that they in due time send him their requests for business meetings. He will then forward a complete list to the organizers.

Berbert invited the members of the IGC Steering Committee to Rio for a meeting in August 1998, but the dates are not fixed yet.

Boriani then expressed concern about the difficulties of reaching the Congress centre from Copacabana but Berbert did not see any problem. Moreover, the traffic between the Congress centre and city centre and vice versa will be in the opposite direction in the morning and evening rush hours. There are also hotels around the centre.

Concerning invited speakers, Berbert remarked that they would try to cover their travel expenses, but it was not certain. Brett suggested to increase the travel grants for young scientists and to pay only for the best invited speakers.

Berbert announced that the deadline for submission of abstracts will be September 1999. However, this is a tentative date. The organizers will try to extend the deadline in order to receive papers with recent data.

J. Aaron commented that themes such as societal impacts and societal responsibility are missing. Berbert responded that the presented titles are just examples. Zhang reported his experience that the first days of a Congress are those with the maximum attendance. So, he suggested to hold the three major colloquia during the first three days. Speden mentioned the organization of the poster session, pointing out that there should be room enough to circulate and enough time, at least a whole day.

Boriani asked about the role of the other South American countries. Berbert responded that their main role is to organize field trips in their countries and also to contribute to the scientific program. Speden expressed concern about putting too much emphasis on South America. Since this is a global congress, he urged the organizers to search for a balance.

On a question from Brett about the registration fees, Berbert assured that they will be kept low, in order to have the maximum of participation.

In concluding the discussion, Brett remarked that IUGS feels responsible for the Congress; this is symbolic and deep-rooted, and the Executive Committee is therefore prepared to help.

The Committee COMMENDED the Organizers of the 31st IGC for the work done, and THANKED the IGC representatives for reporting to the Executive Committee.

7. INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS (ICSU)

7.a. Relations with ICSU

R. Brett spoke of the many activities IUGS has in common with ICSU and mentioned all the IUGS representatives to ICSU committees.

7.b. ICSU Extraordinary General Assembly

J.-F. Stuyck-Taillandier, the ICSU Executive Director, reported on the new ICSU statutes and presented the proposal to change the name International Council of Scientific Unions (ICSU) into the International Council for Science, while keeping the acronym and logo that is well known and keeping close contact with the Unions. In its new form the General Committee will be replaced by an Executive Board. This will consist of six officers, eight ordinary members (four from Scientific Unions and four from National Scientific Members). However, some people think that this number is too small.

Each member of the Executive Board will have a special task (e.g. to be in charge of external relations), while the ordinary members will be linked to the different committees and bodies of ICSU. Part of the grant programs will finance interdisciplinary proposals coming from joint unions. All these points will be discussed at the Extraordinary General Assembly in Vienna in April 1998. The latest version of the proposed Statutes changes has already been mailed. P. Wyllie (IUGG) had requested some explanations.

A. Green commented that ICL should not underestimate the importance of having the ICSU logo, even if the money arriving from ICSU is just 5% of the funds necessary to run ILP. Stuyck-Taillandier said that part of the money for the grant programs will be given to new interdisciplinary programs, but part of that money must be given as seed money.

Brett expressed concern about abolishing "Unions" from the title of ICSU and about abolishing inter-union commissions. Stuyck-Taillandier repeated that the internal policy is to prefer inter-union proposals. Boriani commented that the Bureau has discussed the changes of ICSU, but that the Committee members have not been informed earlier and he therefore gave a brief summary. There is a concern about the disappearance of "Unions," that can be seen as a diminishing of the importance of the unions in ICSU. Although, the change will benefit national members, particularly larger ones.

Stuyck-Taillandier explained that this change is mainly due to the meaning of the term "union" in English (such as trade union) and assured the Executive Committee, that from the ICSU point of view, there will be no change in policy. He also stated that ICSU does not represent countries, but the different aspects of science.

P. Wyllie raised the question of representation of the earth sciences on the Executive Board. It appears to be no strategy

for ensuring representation of all sciences on the Board. Stuyck-Taillandier agreed that five representatives of unions and five of the national members would be better.

I. Speden pointed out that it would be necessary to clarify what the expected improvements were.

Boriani was personally not in favour of the proposed equal importance of national members and union members, because unions are truly international, and he suspected that some of the national representatives may be elected for political reasons. The unions are the only entities that can guarantee international science. Stuyck-Taillandier stated that many representatives are academics, even though they are no longer involved in active research. However, there is a constant effort to keep in touch with important scientific bodies like the U.S. National Science Foundation. He suggested that ICSU's goal was to continue the work of high level programs. Speden complained about the scarce weight of geoscience in those programs.

W. Eder then raised the problem of how to reach the real world, how to increase both the visibility and influence on decision-makers. He thought that this is the direction in which the geologists should work together to promote earth sciences. Stuyck-Taillandier announced that ICSU is organizing a World Science Conference in Budapest in 1999. This will be a good opportunity to show that earth science exists and he officially asked IUGS to contribute. 1,500 participants are expected to attend this meeting. W. S. Fyfe proposed that "Misuse of Science" could be an issue of the conference and Stuyck-Taillandier agreed. W. Eder gave information of the general goal of the conference, which is very broad, but the general idea is to cover the following three issues: To explain the role of science in society; to discuss ethics of science; and, to discuss the philosophical approach to science.

Governments should be pressured to see science as more important. There would be a possibility to organize a satellite conference on earth science issues in Budapest together with IUGG and UNESCO. Brett agreed that this could be a good proposal, but was concerned that it could decrease UNESCO funding for ongoing projects.

Boriani asked if there are some suggestions for the next years for IUGS applications for ICSU grants and Stuyck-Taillandier replied that they would prepare a document on the criteria that ICSU is using.

A. Green agreed that multi-disciplinarity is important and commented also that June 1999 is very near and the time is very tight for organizing initiatives of the major unions like IUGS and IUGG. He also commented that geographers should be involved. This means that we must start the preparations immediately.

E. Dudich remarked that the goal and the organization of the Conference is not clear and since the election in Hungary is near, he expressed his concern that the new government may have a different attitude towards the Conference. Stuyck-Taillandier replied that this is not a scientific conference, but a means for reaching the outside world. Moreover, international commitments are usually respected.

The Committee THANKED J.-F. Stuyck-Taillandier for his reporting on ICSU.

7.c. Interdisciplinary ICSU Bodies

7.c.1. Science and Technology for Earth Management (STEM)

W. Fyfe said that STEM had several meetings and it is planning its activities but it is still doubtful whether this program will ever take off.

Boriani reported that Sinding-Larsen prepared a proposal to STEM on CO₂ disposal and the Bureau decided that the issue is worth pursuing in any case. It was decided that Sinding-Larsen will be asked to develop a proposal that will be considered for an ICSU grant application for a symposium or other activities.

7.c.2. Committee on Capacity Building in Science (CCBS)

R. Brett asked Fyfe if he had attended the meeting of the Capacity Building Committee. The answer was that he never got the invitation, nor did P. Wyllie (IUGG). A. Green said that his invitation arrived the previous week.

7.c.3. IUGS-IUGG-ICSU Inter-Union Commission on the Lithosphere (ICL)

A. Green, the ICL President, presented the ICL report, pointing out that this Inter-Union Commission of ICSU was initiated by IUGG and IUGS in 1980. ICL achieves its goals by promoting and

managing the International Lithosphere Program (ILP), which is a continuation of the International Geodynamics Program of the 70's, to promote collaboration in the Earth Sciences for research on the origin, evolution and dynamics of the lithosphere with special attention to continents and their margins.

ILP now promotes interdisciplinary research programs aimed at understanding natural catastrophes and other solid earth processes that affect mankind, i.e. ICL is moving towards a research field which is of direct interest to mankind. Green presented a chart depicting where ICL belonged, and its funding sources: IUGG, IUGS, ICSU, UNESCO, national contributions and voluntary contributions.

ILP has run four themes:

- The geoscience of global change
- Contemporary dynamics and deep processes
- Continental lithosphere
- Oceanic lithosphere

These themes has again run several projects. Most of the active projects are close to their end. Green further mentioned the four coordinating committees that ICL/ILP has established, and that the call for research in 1997 resulted in more than 80 proposals for projects for the future, of which seven were accepted. Green noted that most of the ICL funds go to the project leaders and chairmen.

R. Brett commented that ICL's success in stimulating and implementing interdisciplinarity should be an example for other IUGS bodies. Green said that USD 5,000 is the average annual funding of each project. The generated leverage is of about five times. Brett noted that there are few project leaders from developing countries, which is disappointing. Green responded that there were project members from Russia and China and some developing countries, but that selection of project leaders was solely done on the basis of scientific excellence. The publishing policy is based on an agreement with Tectonophysics (Elsevier), but it is not a fixed policy.

A. Boriani commented about the ICL meeting in Tessaloniki, saying that he was impressed with the mechanism of reviewing projects. This could be an example for IUGS. He asked what the voluntary contributions are and how they are obtained. Green answered that these are given by autonomous decision of some countries and are used to support the participation of developing countries and former eastern block countries.

Hervé stated that this is an excellent program, but not very visible in Latin America, less than IGCP, and asked how the program works. Green explained that the call for research was advertised in different journals, and it was sent to IUGG and IUGS. The hope is that IGC will contribute in spreading the information. Speden repeated Hervé remarks and proposed that publicity could be done through National Committees and also Episodes.

Fyfe suggested that nuclear waste disposal could be a worthwhile subject to study on a global scale.

Nyambok complained about the large gaps of data on the African continent, evident from the produced world maps. Green said he was aware of the problem, which is mainly due to the decreased involvement of developing countries, but will try to find a solution .

Boriani suggested informing the adhering bodies of IUGG and IUGS about ICL. The situation will change when ICL becomes an independent scientific committee, like COSPAR and SCOPE that receive funding directly from the adhering bodies.

7.d. Relations with other Unions of the ICSU family:

7.d.1. International Union of Geodesy and Geophysics (IUGG)

R. Brett introduced P. Wyllie, the IUGG President, and pointed out that he and Wyllie try to attend each other's Executive Committee meetings with an aim to attaining closer cooperation between the two unions. Brett attended the IUGG Executive Committee meeting in Birmingham, U.K. in 1997 and welcomed Wyllie to the IUGS meeting.

Wyllie then explained the structure of IUGG which consists of IAG (Geodesy), IASPEI (Seismology), IAVCEI (Volcanology), IAMAS (Meteorology), IAHS (Hydrology) and IAPSO (Oceanography). IUGG is largely physical and the associations are mostly independent. The main objectives of the union are to keep the associations speaking and working with each other. They meet every four years. The next meeting with many interdisciplinary symposia will be in Birmingham, England in 1999.

Concerning the IUGG - IUGS relationships, Wyllie said that the main goal is to keep in touch and collaborate, as in the case of the application for ICSU grants. Speden asked what the opportunities were for new integrated projects between IUGS and IUGG through ICL. Wyllie thought that the Earthquake and Megacities Initiative (EMI) was a good project.

Boriani added that the collaboration IUGS has with IUGG is mostly through IASPEI, which is a mainly seismological association, and less with IAVCEI, which is more geological. There are no scientific reasons for the presence of IAVCEI in IUGG. Even if IAVCEI has a historical link with geophysical volcanology, during the last years they are mostly dealing with the chemistry of the earth's interior. Now, with help of Dr. Casparini, there is a real bridge between geology and geophysics in IAVCEI.

The Committee THANKED P. Wyllie for his presentation of IUGG and for his participation in the Executive Committee meeting.

7.e. ICSTI

Brett announced the decision to terminate IUGS' association with ICSTI.

7.f. ICSU Grants

A. Boriani described the IUGS applications for ICSU grants that were submitted last year. In category I, there were proposals from DMP, prepared by R. McCammon, a group of IGCP coordinated by E. Derbyshire, and one from Tony Naldrett, organizer of the IMA meeting in Canada. Despite the fact that the IUGS applications all were well prepared, no grant was given in category I. Only applications for category II were funded. Category I proposals that obtained grants from ICSU were strongly interdisciplinary and supported by more than one union. Boriani added that it is worth noting that the recipients of the three grants were mostly from biological fields.

The rules for next year are the same as for 1997. The Bureau has decided to ask Derbyshire to improve the application from last year (mostly on climatic change), de Mulder to prepare an application from COGEOENVIRONMENT, and C. Skinner to prepare an application for a research on geochemistry and health. The Bureau has also decided to ask A. R. Berger to provide some ideas. McCammon will be asked to prepare a project on the mining environmental problem.

7.g. IUGS Representatives on ICSU and ICSU Committees

International Council of Scientific Unions (ICSU)	R. Brett
Committee on Data for Science and Technology (CODATA)	A.G. Fabbri
Committee on Space Research (COSPAR)	V. Singhroy

Committee on Capacity Building in Science (CCBS)	W.S. Fyfe
Scientific Committee on Water Research (SCOWAR)	J. Margat
Coordinating Committee for the Moon and Planets (CCMP)	J.W. Head
III	
Scientific Committee on Antarctic Research (SCAR)	I. Dalziel
Scientific Committee on Oceanic Research (SCOR)	Enrico
Bonatti	
Scientific Committee on Problems of the Environment (SCOPE)	A.
Cendrero	
Scientific Committee for the International Geosphere-Biosphere Program (SC-IGBP)	N. Petit-
Maire	
Committee on Science & Tech. in Developing Countries (COSTED/IBN)	V. Babuska
Standing Committee on Freedom in the Conduct of Science	M.
Gaetani	

The Committee AGREED to the above list.

8. IUGS POLICY AND STRATEGY MATTERS

8.a. IUGS Statutes

A few changes should be made to adapt the other parts of the Statutes to the changes approved in Beijing.

The Committee DECIDED that J. Reinemund should be asked to review the changes to the IUGS Statutes.

8.b. IUGS Nominating Committee

W.S. Fyfe (Canada), Chairman	B. Ratanasthien (Thailand)
F. Hervé (Chile)	P. Affaton (Niger)
Liu Dun-yi (China)	T.C. Partridge (South Africa)
V. Babuska (Czech Republic)	

A. Boriani said he will forward a list of positions in Executive Committee that will become vacant in year 2000 to the Nominating Committee. R. Brett suggested that there should be more than one candidate for each vacant position and F. Hervé agreed. Brett also proposed that candidates should be asked to present a one-page statement with information about their potential contribution to IUGS. He underlined that the representation on the Committee should not only be geographical but also -

disciplinary, and that women should be more seriously considered than in the past.

8.c. IUGS Strategic Planning Committee

A. Boriani reiterated the history of the birth of the idea of the Strategic Planning Committee during the Council meeting in Beijing. Unfortunately, a lack of funding prevented the Planning Committee from holding its first meeting. Subsequently, the Bureau decided to ask the Executive Committee members to act as a strategic planning committee. IUGS should determine which research is important for Society, which is not what the Union was born and designed to do. IUGS was founded to act in the interval between two IGCs. The structure of the Union is a classical structure with commissions on different aspects of geosciences. The IUGS joint program, ICL, is a good example of a commission that started as an old fashioned commission, then transformed into a more modern, scientific program. Boriani directed the following question to the Committee: Are we to remain the traditional kind of union or change into a modern scientific committee? The Committee should decide what it wants.

R. Brett reported that the Bureau has decided to ask for research proposals to be funded in summer or early autumn. J. Aaron argued that before asking for proposals, one has to decide whether the goals are long or short-term. IUGS should establish written goals.

W. Fyfe moved that the meeting of the strategic planning committee should be held with UNESCO, World Bank energy companies (OPEC or Shell), giants in mining, and ICSU in order to have a think-tank meeting.

Boriani stressed that Executive Committee should discuss the identity of IUGS. Going to interdisciplinary research could just mean application of science and very little first class science. Fyfe disagreed, arguing that if we move into new fields we will immediately need new science.

I. Speden suggested one should start from the document that was prepared by G. Caldwell, M. Schmidt-Thomé and himself last year. Johan reminded again of the extreme need to increase the visibility of earth science. Green underlined that only funding agencies can influence the choice of the researchers.

Speden stressed the importance of quickly identifying the key fields and was unsure that the Executive Committee is the right

body to address this point. Aaron repeated the need for identifying the goals and remarked that when having identified the goals it would be fairly easy to chose the best structure and strategy.

Brett proposed to ask the Bureau to prepare a one page document to be attached to Speden's document of last year and have it circulated through the Executive Committee members and to prepare a list of people and ask them to start working to develop a plan through e-mail, because everything should be ready before next Executive Committee meeting. It was decided to request suggestions or proposals for strategic planning to commissions, subcommissions and affiliates.

W. Al-Hashimi said that the Executive Committee should evaluate the achievements of IUGS before the year 2000. Not many know IUGS. Did IUGS in the past concentrate on basic or applied research? Do we like to see IUGS more flexible to changes? Do we go on keeping the commissions or do we want to start from a project basis? How much has IUGS served the industry? He also said he thought that Fyfe's idea was reasonable, because we cannot really plan for the world, but we should listen to it. What is expected from IUGS?

Brett said commissions were formed because there was a job to do for them; for example systematics in petrology and stratigraphic boundaries. There are bigger and more effective funding agencies than IUGS. If we start to fund research projects we will put ourselves in competition with IGCP and ILP.

The Committee DECIDED that instead of asking for research proposals, IUGS should organize groups of scientists to study some societal problems within the earth sciences, e.g. the nuclear waste disposal problem, CO₂ disposal and so on.

I. Speden suggested the possibility of asking someone who knows IUGS well to list the major goals of IUGS in the past; E. Seibold or R. Trümpy, for example.

It was noted that the Chairman of the Strategic Planning Committee is Peter Cook (Australia).

A. Green stated that it could be useful to tell the commissions that some of them will be terminated to open new interdisciplinary programs and that five to eight themes should be indicated: such as nuclear waste disposal, natural hazards

and society, and urban geology. Johan proposed to address earth science processes; one of the projects on the list could be erosion. Fyfe added that food security would be another interesting subject that, at the moment, is pursued entirely by biologists.

The Committee DECIDED that the Bureau should prepare a list of key issues suggested by Speden and Green and try to raise money for the first meeting of the committee. Boriani should contact the IUGS bodies and ask what they consider important in their geological field and in neighbouring fields and then he should contact P. Cook.

A. Boriani will ask Commissions, Subcommissions and Affiliates for strategic planning suggestions in their own field or interdisciplinary fields.

The Bureau will prepare a list of key issues to be included in the strategic plan, following Speden's suggestions, for discussions on e-mail among a smaller group of selected people. Later, a meeting of one to two days will be organized. The Executive Committee will then examine the result and another group will take the plan and make a layout of the best structure for the Union to achieve the goals. This work should be completed before the next EC meeting.

8.d. IUGS Committee on Public Affairs

R. Brett said that this had not moved because of more immediate issues that occupied his time.

9. EXTERNAL RELATIONS

A. Green reported that ICL is working on Earthquake Hazards in Megacities. It has also prepared a proposal for a program called "Earthquake and Megacities Initiative (EMI)". Other problems regarding megacities should also be studied, not only catastrophic risks like earthquakes and floods, but long term problems like waste disposal and water pollution.

Berbert reported on the Brazilian experience that these programs also help finding jobs for geoscientists because the geoscience experts working for municipal governments are few and generally not very good. Recommendations from external groups are welcome.

Boriani asked about the interest of insurance companies in this area. The World Bank has indicated an interest and promised financial support if local capacities are developed. Johan said that a few years ago a European program on megacities was conducted by IAEG under Masure's (France) leadership. Green has tried to contact this group without obtaining an answer.

10. REQUESTS FOR FUNDS AND BUDGET FOR 1998

See Appendix 2 for the 1998 allocations.

11. UPDATE

11.a. Directory

H. Refsdal presented a draft of a new Directory and asked all Committee members and observers to assist in correcting addresses, etc. R. Volkov volunteered to prepare all corrections regarding Russia and forward them to the Secretariat. A. Boriani urged everybody to keep the Secretariat informed of changes of addresses, even temporary ones.

11.b. Brochure

R. Brett stated that there will be no reprinting of the IUGS Brochure "What is IUGS?" since it is very well replaced by the web page.

11.c. Increase of the membership dues

R. Brett commented that the general problem is that the membership dues have not changed since 1989, and the inflation is thereby not covered. He requested suggestions as how to raise the dues, gradually or in one step, and the amount they should be raised. He reminded the Executive Committee that IUGG is more expensive with the highest category being USD 42,000 as IUGS' highest category is USD 28,000. Hervé thought that it may be difficult to adopt a system to change the fee every year. He would prefer a single increase for not less than four years. P. Wyllie agreed in saying that IUGG changes every four years based on world wide inflation.

On behalf of V. Zharikov, Volkov suggested decreasing the difference between category 1 and 8: Category 8 is sixteen times

higher than category 1. Brett replied that in terms of national wealth, the difference between developed countries, like the USA, and developing countries, like Gambia, is much more than 16 times.

Z. Johan explained that 75 % of IUGS members pay their dues, but nine countries cover most of the income. He added that category 1 represents 70% of the member countries, forty-one of whom are inactive. All the countries above category 2 are paying their dues, hence raising category 1 dues payment will not affect the income. Wyllie reported that IUGG had the same problem and had created category 0 in order to keep the countries that do not pay and prevent the union from becoming a club for rich countries.

A. Boriani pointed to the possibility that high category members will ask for a lower category, if the dues are increased. Schmidt-Thomé suggested asking advice from ICSU.

Brett proposed to raise the dues by 25%. Speden proposed to increase the dues by 25% for the lower categories, 10 % for the intermediate and 5 % for the highest. C. Berbert argued that large increase in dues for a Union with relatively low visibility might be a bad idea. J. Aaron suggested to calculate how much dues revenue had been lost due to inflation during the last years and to use it as an upper boundary.

A. Green advised against comparison with other unions; the good times have gone and it is necessary to learn to be more efficient. He suggested presenting the increase starting with an inflation rate of 25%, minus improved IUGS capacities, arriving at an increase of dues of 9,5%. He considered 10% to be the upper boundary, beyond which one could meet many problems.

Boriani reported that in Italy, there is a trend to cut the support to some unions, mostly because the national representatives are inactive. He therefore recommended having the best possible national representatives, contacting the National Committees and not the funding agencies for advice on raising dues.

W. Al-Hashimi advised concentrating on attracting associate members that pay membership and he had prepared a list of institutes and companies to be contacted. Brett reported that as Secretary General he had tried the same thing, contacting 400 companies related to geology, but received only three responses. I. Speden underlined the importance of having a document that clearly spells out all the benefits of being an associated

member, what changes are going on, what are the more recent achievements, etc. in a three page document.

W. Janoschek recommended first to convince National Committees of the Adhering Bodies that it is necessary to increase the fees and if this is not successful one should try other national agencies. The National Committees should be provided with a full list of good arguments to convince the politicians to pay.

Johan gave the Committee some figures and reported that if all members pay, the total income would be USD 255,200. An increase of 5 % for all categories would make USD 12,760. Last year there was a deficit of USD 40.000 because of countries failing to pay.

The Committee decided that the Bureau may ask some of the Committee members to assist in preparing a document with proposal for increase of dues, to be discussed at the next Executive Committee meeting. In the mean time, all Committee members need to advise the National Committees of their region.

12. VENUE AND DATE OF 45th EXECUTIVE COMMITTEE MEETING

E. Giobbi, on behalf of the Italian National Committee, presented the invitation to hold an Executive Committee meeting in Florence from 26 - 30 January 1999 including a pre-meeting field trip from 22 - 25 January. R. Brett asked if five days were necessary for the Committee meeting, remarking that the UNESCO IGCP meeting will start 1 February. Boriani pointed out that a five days meeting would allow for an ABRD meeting on Thursday 28th. During the field trip to Sicily the Committee members will be invited to participate in a short workshop in Palermo on natural hazards, or the theme may be "Geology and Society".

The Committee THANKED the Italian National Committee for the generous invitation to hold the Executive Meeting in Florence in 1999.

13. OTHER BUSINESS

R. Brett closed the meeting by thanking the Austrian Geological Survey and its staff for their hospitality in hosting the Executive Committee meeting. He especially expressed his gratitude to W. Janoschek for excellent organization of the

meeting and he thanked the Committee and other attendees for their participation.

The 44th session of the IUGS Executive Committee meeting closed at 16:30 on Friday, January 30, 1998.

March 1998
Secretariat
International Union of Geological Sciences
Trondheim, Norway

(The preceding minutes are subject to approval and adoption by the Executive Committee.)

NOTES