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THE INTERNATIONAL COUNCIL FOR SCIENCE
SCIENTIFIC COMMITTEE ON ANTARCTIC RESEARCH

SCAR BULLETIN
No 152, January 2004

SCAR Executive Committee Meeting

Brest, France, 11–15 July 2003

Report of the Meeting

Opening formalities

C G Rapley took the chair and opened the meeting by welcoming the members to Brest. The President, J Thiede, arrived in the afternoon and apologized for being unavoidably delayed. R Schlich and J Turner were also delayed and joined the meeting on 13 July 2003.

Present: J Thiede (President); R H Rutherford (Past-President); R Schlich, C G Rapley, J López-Martínez, C Howard-Williams (Vice-Presidents); A Capra (Deputy Chief Officer, SSG Geosciences); S L Chown (Chief Officer, SSG Life Sciences); J Turner (Chief Officer, SSG Physical Sciences); M C Kennicutt II (representing the SC for the Antarctic Treaty System); P D Clarkson (Executive Secretary).

1. Adoption of the Agenda

The draft agenda was adopted with the addition of items 9.6, 9.7, 10.5, 10.6, 10.7, 15.2, 15.3 and 15.4.

2. Membership of SCAR

The Executive Secretary reminded the meeting that Malaysia is expected to apply for Associate Membership of SCAR. He also reported that Switzerland and Bulgaria are proposing to apply for Full Membership of SCAR. Instructions for submitting an application have been sent to the parties. The Executive Secretary was asked to send a letter of encouragement to all three applicants, reminding them of particular aspects of the application and drawing attention to the importance of paying promptly the annual contribution to SCAR. The Executive Committee also suggested that potential new memberships should be explored by reviewing the list of Antarctic Treaty Parties and identifying those that are not members of SCAR and might be recruited.

3. Antarctic Master Directory (AMD)

D Peterson, Chairman of JCADM, made a brief presentation to the meeting on recent progress about the development and population of the AMD with metadata. He reported that 26 countries have now formally notified JCADM of the establishment of an NADC; not all of the NADCs are fully operational and submitting metadata. He also reported that the GCMD is working to make the AMD compatible with the “Google” internet search engine that will facilitate searches.

He indicated that the GCMD is keen to continue supporting the AMD and will be prepared to do so for a more modest financial contribution than at present. Currently the GCMD contains about 10,000 metadata records of which the AMD entries constitute about 25%.

Further discussion of this topic took place in the meeting with the COMNAP Executive Committee (see Appendix 1).

4. COMNAP

A joint meeting of the SCAR and COMNAP Executive Committees was held on Friday 11 July 2003 and is reported in Appendix 1.

5. Reports of SCAR groups

The Chief Officers of the Standing Scientific Groups presented their reports of activities since XXVII SCAR in Shanghai, July 2002. The reports will be placed on the SCAR website (<http://www.scar.org>) following the meeting.

5.1 SSG on Geosciences

A Capra presented the report on activities by the SSG (see Appendix 2). He drew specific attention to the proposed Expert Group to address the issue of marine acoustic technology in the Antarctic marine environment. The

Executive Committee confirmed the intention to establish the Expert Group and to ask P E O'Brien and O Boebel to suggest appropriate members from inside and outside the SCAR community. National Committees should also be requested to provide nominees for the Expert Group. The meeting welcomed the SSG's report especially the *Georeach* publication.

5.2 SSG on Life Sciences

S L Chown presented the report on activities by the SSG(see Appendix 3).. The Executive Committee noted with concern that the website for the Expert Group on Seals was not yet operational. The Executive Secretary was asked to write to E S E Fanta to determine the status of the offer by Brazil to host the next Biology Symposium in 2005. S L Chown would contact the Expert Group on Birds to determine when or if a workshop on human approach distances to birds in the Antarctic, especially by aircraft, will be held.

5.3 SSG on Physical Sciences

J Turner presented the report on activities by the SSG (see Appendix 4).. The Executive Committee noted that the Action Group on Oceanography would be meeting in October 2003 and that a representative from SCOR would be invited to participate. It was also noted that SCOR would hold its next meeting in Moscow during September 2003 and that SCAR has been invited to participate. This matter was discussed further under Agenda Item 9.2. The planned publication with WMO of a hard copy version of the *International Antarctic Weather Forecasting Handbook* was welcomed.

The Executive Committee thanked the Chief Officers for their presentations.

6. Proposals for SCAR Scientific Research Programmes

6.1 Antarctic Climate Evolution (ACE)

The proposal for ACE, prepared by the SCAR Scientific Programme Planning Group, was considered to be very well set out, focusing on the study of the Cenozoic climate and glacial history of Antarctica and the Southern Ocean.

The objective of the research is well planned through the integration of palaeoclimate studies, ice-sheet modelling and the geological record. The multi-disciplinary approach, necessary for this research, is well described with the specification of the thematic components involved.

The phases and the methodology of the research are clearly described including the acquisition and compilation of new geosciences datasets. The themes to be studied are well identified as well as the methodologies and technologies to be used. The proposal identifies the interactions between scientific and technological aspects, particularly in the necessary developments in drilling systems.

The proposal takes into account the present and past results on Antarctic research, considers the connections with other initiatives related to other projects, such as AGCS, ANDRILL, ANTEC, IODP, etc. The links with the SCAR Programme Planning Group for proposed "Antarctica and the Global Climate System" (AGCS) programme are emphasized.

The time-line and milestones provide a detailed overview of the research stages prior to formal presentation of the proposal and then for the five years planned activities.

The SCAR Executive Committee, noting that the Antarctic Centre of Excellence established in Tasmania is already using the acronym "ACE", suggested that the title of the proposed Research Programme should be changed to Cenozoic Antarctic Climate Evolution (CACE) to reduce confusion.

The SCAR Executive Committee recommended the development of closer links between this programme and other related programmes such as EBA (Evolution and Biodiversity in Antarctica).

The budget required has to be reduced to \$ 25.000 overall, taking into account the limited SCAR resources. Considering that the proposal has a well developed timescale for closing off programmes, the financial support should be guaranteed for the duration of the programme.

The proposed programme coordinates very important research in Antarctica and the preliminary plan is well elaborated. The proponents are encouraged to build on this solid base and proceed with the submission of a full proposal for a SCAR Scientific Research Programme to be tabled at the next SSG and Delegates meetings.

6.2 Interhemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research (ICESTAR)

ICESTAR is concerned with quantification of various mechanisms that control bi-polar regional differences and commonalities in the magnetosphere-ionosphere coupling in the two Polar Regions.

The main criticism of the proposal is that there is insufficient stress on new science.

While it is recommended that a full proposal be developed from this outline bid, it must concentrate on highlighting new initiatives. The main challenge at the start of the "scientific objectives" section is taken from another document. ICESTAR should develop more of a character of its own and outline its own "grand challenge". It must also indicate why and how it is advantageous to bring together the various national efforts in this field and what is the value added. The overall programme should provide a rationale and a plan for a quantum leap in aeronomy research. In addition, it was felt that much of this work is going to happen anyway so the proponents need to explain why this activity will create a new opportunity for advancement of the science.

In summary, it was felt that ICESTAR addresses a

promising field of science but the final proposal must be significantly improved and the proposal should emphasize more exciting new science.

6.3 *Evolutionary Biology of Antarctica (EBA)*

The functional significance of biodiversity and its inextricable links to the physical environment are being increasingly appreciated. The importance of phytoplankton in the Carbon cycle is one of the best-known examples of this interaction. The interface between physical and biological processes in the Antarctic is no less significant. However, the development of this relationship and its likely future trajectory in Antarctica are poorly understood. Just how biodiversity in Antarctica has evolved in response to environmental change, what this has meant for the physical environment, and what the consequences of these interactions are for a rapidly changing Earth are pressing concerns. Whilst recognizing the complexity of these issues, it is clear that the cooperative nature of Antarctic science, and the global significance of Antarctica as a natural laboratory for evolutionary biology and biodiversity research, provide powerful means to examine them. The EBA is a new scientific programme for doing so.

This programme will be closely aligned with several other SCAR programmes investigating climatic and tectonic change in the region across a range of temporal and spatial scales. Its major outcomes will be an integrated understanding of the evolution of biodiversity in the region and its associated feedbacks, as well as the development of a predictive capability for understanding the likely consequences of future environmental change.

The SCAR Executive Committee commends the LSSSG for the well-developed timeline for ending current programmes and implementing the new one, and encourages the EBA to further develop its close links with other proposed science programmes such as Cenozoic Antarctic Climate Evolution and Subglacial Antarctic Lake Exploration. The SCAR Executive Committee also recommended that EBA develop its full proposal for presentation at SCAR XXVIII, and that it continue for six to eight years following implementation. It is recommended that the development of this programme proceeds with SCAR support, and that the current programmes (RiSCC, EVOLANTA, EASIZ) be continued with the usual performance provisos to the dates of closure presented in the EBA proposal.

The future funding level for the development of this programme, and the completion of RiSCC and EVOLANTA, should be set at \$25 000 per year (with \$15 000 per year committed for EBA development in 2005 and 2006).

6.4 *Antarctica and the Global Climate System (AGCS)*

The SCAR Executive Committee noted the importance and relevance of many of the topics mentioned in the AGCS document. However, as presented, the proposal is

unconvincing. It comprises a “laundry list” of questions and issues encompassing a vast range of topics under the general umbrella of “Antarctic meteorology”. It is unfocussed, inconsistent and provides little insight as to how it would add new knowledge or understanding, other than a poorly defined observing system component (ACOS – Antarctic Climate Observing System).

Although passing references are made to solar influences, the ozone hole, vertical linkages through the atmosphere, clouds and aerosols, ice sheet dynamics and mass balance, sea ice processes, ice shelf/ocean interactions, deep bottom water formation, ENSO teleconnections, and mean sea level rise, not one of these topics is addressed in any detail.

However, some effort has been applied to defining a complex hierarchical structure of planning / implementation groups and to providing an estimate of annual costs to SCAR.

The authors are recommended to rethink their approach, focusing on a single major issue (for example: “Identifying and Understanding the key climatic linkages between the Antarctic and the Global Climate System”), and to submit a preproposal which has a clear and tangible purpose, well-defined aims, objectives and deliverables, and is achievable in a timeframe of 5 to 10 years. The ACOS concept, if developed further, could provide a useful input to the International Polar Year 2007–08 activities. However, the SCAR Executive Committee would wish to understand clearly what it would consist of, what it would be for, and how it would be implemented. A full proposal is not encouraged at this stage of the concept development.

6.5 *Subglacial Antarctic Lake Exploration (SALE)*

Since 1995, several workshops had been held to discuss subglacial environments in general and with specific reference to the Vostok subglacial lake, culminating in the Cambridge Workshop in September 1999. Following this, the establishment of the Group of Specialists on Subglacial Antarctic Lake Exploration (SALEGOS) was approved at XXVI SCAR in 2000. The only change to the membership has been the addition of M J Siebert.

SALEGOS held its first formal meeting in 2001 and its fourth in Chamonix during April 2003. The Group has been very active and produced timely reports. It has considered a variety of scientific and technological subjects as part of its deliberations and members have attended other workshops dealing with allied subjects. Contacts with other agencies, such as NASA, have been utilized as the Group’s work has evolved.

The Executive Committee has received and considered the fourteen Recommendations from the Group of Specialists. Recommendations 1 and 2 are included as part of the overall SCAR effort regarding subglacial lakes and the investigation of subglacial environments. The latter will be a part of the suggested research activities submitted by SCAR to be a major theme of the IPY 2007–08 (Recommendation 13).

SCAR has consulted and will continue to interact with COMNAP regarding the technologies and necessary logistics that will be required to implement a programme of subglacial environment exploration and specifically to ensure a safe and clean lake entry and sample retrieval (Recommendations 3 and 4).

By letter to National Committees, SCAR will encourage them to support fully SCAR and its Scientific Research Programme as the International Scientific Steering Committee for subglacial environment exploration and will urge interested National Committees to promote and organize subglacial interest in their countries (Recommendations 5 and 6).

The Executive Committee agreed that the Group of Specialists should contact the ICSU Committee on Space Research (COSPAR) directly to seek advice concerning possible contamination issues (Recommendation 7). SCAR also urges National Committees to seek guidance and input on possible contamination issues from national organizations (Recommendation 8). The Executive Committee accepted Recommendation 9 and encouraged the Group of Specialists to propose relevant activities and to provide suitable publicity material.

The Executive Committee accepted Recommendations 10 and 11 to disband the Group of Specialists in 2004 and establish a SCAR Scientific Research Programme on Subglacial Antarctic Lake Exploration (SALE). The Executive Committee recommended that the transition plan and annual budget request for 2005 should be submitted to the XXVIII SCAR Delegates Meeting in Bremerhaven, October 2004, for approval.

The SCAR Secretariat will consult with COMNAP regarding a possible technology workshop to be held in conjunction with the XXVIII SCAR Science Meeting in Bremen, Germany, during July 2004 (Recommendation 12).

The detailed comments on the Russian draft Comprehensive Environmental Evaluation (CEE) for sampling the water of Vostok Subglacial Lake were formally submitted to XXVI ATCM by SCAR as an Information Paper (XXVI ATCM IP 094) (Recommendation 14).

7. SCAR Meetings

7.1 XXVIII SCAR

M Reinke and M Kunz-Pirring of the Alfred-Wegener-Institut, representing the Local Organizing Committee for XXVIII SCAR, gave a detailed presentation of progress in the preparations for the meeting. The Executive Committee welcomed this presentation and was impressed with the facilities being made available.

The First Circular for the meeting will be distributed during August 2003. Chief Officers were asked to decide, as a matter of urgency, the scientific themes for the parallel sessions and to propose suitable speakers for the keynote addresses.

There was extensive discussion on the subject of whether or not to charge a registration fee for the Open Science Conference to be held on Monday to Wednesday, 26–28 July 2004. While it was recalled that a registration fee has never been charged in the past for biennial SCAR meetings, it was recognized that this SCAR meeting will be the first in the new organization of SCAR and that it will be a very different style of meeting for the Science Meeting in Bremen. It was agreed that there should be a registration fee charged to all participants to the Open Science Conference during the first three days of the Science Meeting. The fee was provisionally set at US \$150 with a reduced fee of US \$50 for students.

The Executive Committee agreed to the following themes for the keynote presentations:

- Antarctica and the Climate System
- Antarctica and Evolution
- Antarctica and Earth Dynamics
- Antarctica and the Earth system
- Antarctica and the Cosmos
- COMNAP

The Executive Committee, noting the very tight deadlines for the Open Science Conference in the first week of the XXVIII SCAR Science Meeting, recommended that advertising should begin immediately through a variety of channels to as wide an audience as possible.

The Executive thanked M Reinke and M Kunz-Pirring for their presentation and for all the work that they and others are doing for SCAR.

7.2 XXIX SCAR

I Allison, Australian Delegate to SCAR, had confirmed that the Australian National Committee will host the XXIX SCAR meeting in 2006. The COMNAP XVIII meeting will be held in parallel with the SCAR Science Meeting and this will likely be located in Hobart, Tasmania, during June or July. The SCAR Delegates Meeting will be held about 3 months later, possibly at a city in mainland Australia.

7.3 XXX SCAR

The meeting noted that Finland and Uruguay had expressed interest in hosting a future SCAR meeting and that Russia had made a formal written offer to SCAR. Bearing in mind the earlier discussion concerning the increased cost of hosting a two part SCAR meeting in the new structure, it was suggested that potential hosts may like to consider hosting the separate parts of future meetings. It was agreed that this possibility should be explored with the Russian and Finnish National Committees for XXX SCAR.

The interest of Uruguay to host a SCAR Meeting was recalled and it was suggested that Uruguay might like to consider hosting one of the meeting weeks for XXXI SCAR in conjunction with another National Committee, possibly also from the Southern Hemisphere.

8. Antarctic Treaty

8.1 XXVI ATCM

M C Kennicutt presented the Report of the SC-ATS. He listed that tasks requested of SCAR by XXV ATCM in Warsaw, Poland, September 2002, and the responses that had been submitted to XXVI ATCM in Madrid as Information Papers. The excellent reception of the SCAR science presentation by Dr Anna Jones (BAS) was noted. The presentation was now available for viewing on the SCAR website and it was agreed that the possibility of producing the presentation with a soundtrack as a Compact Disk for distribution should be investigated.

M C Kennicutt also listed the tasks requested of SCAR at XXVI ATCM. The Executive Committee expressed concern at the amount of work this would involve and M C Kennicutt noted that the majority of this work would devolve initially to the SC-ATS. It was agreed that the SC-ATS should consult SCAR National Committees and Standing Groups as necessary and, where appropriate, should seek advice from outside organizations.

The SC-ATS asked the Executive Committee to consider the composition, size and resources for the Committee. Noting the extensive requests to the Committee and the short time for response it may be prudent to increase the size and resources of the SC-ATS to allow it to meet at least once a year and to ensure adequate coverage of the necessary expertise. The SC-ATS also asked for clear guidance on which Treaty requests should be considered for response. The SC-ATS noted that to execute their duties properly it would be necessary to have a more structured mechanism for receiving assistance and advice from the SSGs, the Delegates, National Committees and the broader scientific community. Wide participation is seen as essential for establishing the "SCAR position" and ensuring the highest quality advice to the Treaty. In a similar manner, a more formal mechanism is needed to identify those issues that SCAR may wish to pursue and present to the CEP and the ATCM. Improved mechanisms of communication at all levels are needed to fulfill SCAR's important role as the science adviser to the Treaty.

The Executive Committee thanked the members of the SC-ATS for the very extensive work that they had prepared.

8.2 XXVII ATCM

XXVII ATCM will be held in Cape Town, South Africa, 24 May – 4 June 2004. SCAR was encouraged by XXVI ATCM to make another scientific presentation and submit supporting Information Papers. It is hoped that this presentation will be made to the Plenary, rather than in the margins of the meeting, but it was noted that the presentation is not included in the preliminary agenda for the meeting. The Executive Committee will decide by the end of August 2003 on the content of the presentation and who should prepare and make the presentation.

9. Relations with ICSU organizations

9.1 ICSU

The request from ICSU for SCAR to provide nominations for the *ad hoc* Expert Panel for the ICSU Priority Area Assessment on Capacity Building in Science was tabled. Members of the Executive Committee were asked to propose the names of suitable persons before the end of August 2003.

The President stressed the importance of keeping ICSU fully informed of SCAR's activities and asked the Executive Secretary to ensure that this was done.

The President also reminded the Executive Committee that ICSU grants are offered annually and asked the Executive Secretary to ensure that these opportunities are brought to the notice of National Committees and Chief Officers.

9.2 SCOR

The Action Group on Oceanography in the Southern Ocean (see 5.3) is planning to hold a workshop in October 2003 to which a SCOR Representative will be invited.

The President of SCAR has been invited to participate in the SCOR meeting in September 2003. It was agreed that this would be a useful way to strengthen the links between the two organizations. J Turner was asked to provide a briefing on relevant oceanographic activities. It was also proposed that someone familiar with the CIRCLE initiative (see Agenda Item 10.4) might attend the meeting to inform SCOR of the current status of the initiative and other oceanographic activities.

9.3 SCOSTEP

SCOSTEP had written to SCAR requesting closer cooperation through the appointment of a SCAR representative to the SCOSTEP Bureau. Dr M Candidi has accepted this role and recently attended the meeting of the SCOSTEP Bureau held in conjunction with the IUGG General Assembly in Sapporo, Japan, earlier in July 2003.

9.4 CliC

The Climate and Cryosphere programme (CliC) is a programme of the World Climate Research Programme (WCRP) that is jointly sponsored by WMO and ICSU.

At XXVII SCAR it was agreed that SCAR should appoint two representatives to the Scientific Steering Group of CliC with expertise in the fields of Antarctic meteorology and ice-core records. J Turner has been appointed and a suitable expert on ice-core records is being sought. The next meeting of the CliC SSG will be held in St Petersburg during November 2003.

9.5 IPY

ICSU has approved the establishment of a Steering Committee for the International Polar Year 2007–08. The Chairman is Professor C G Rapley.

The Executive Committee welcomed this news but noted that the lead time is short for such a major initiative and that much work needs to be done. It was recognized that this will also coincide with the 50th Anniversary of SCAR and that the proposed role of SCAR in the IPY should be emphasized (see also 15.1).

9.6 IUGG

R Schlich, SCAR representative to IUGG, attended the IUGG General Assembly in Sapporo, Japan, during July 2003 and reported on current activities in SCAR including progress with re-structuring SCAR (see Appendix 5). He also reported that he had been re-elected as the IUGG liaison officer to SCAR for 2003–07.

9.7 IAMAS

The International Association of Meteorology and Atmospheric Sciences (IAMAS) will be holding its assembly in Beijing during August 2005. The International Commission on Polar Meteorology (ICPM) is taking the lead in organizing two symposia on:

- Climate Change in the Polar Regions;
- High Latitude Cloud and Weather Systems.

J Turner was asked to approach Professor D H Bromwich, President of ICPM, to suggest that SCAR could co-sponsor those two symposia. SCAR would offer to provide two people as co-convenors of those meetings.

10. Relations with other organizations

10.1 IASC

SCAR was not formally represented at the Arctic Science Summit Week (ASSW). The Executive Secretary will write to the Executive Secretary of IASC to request copies of the report. The Executive Committee recognized the importance of the ASSW and SCAR should seek to have a formal representative at IASC meetings with a reciprocal invitation for IASC to be represented at SCAR meetings.

10.2 UNEP

The United Nations Environment Programme (UNEP) Regionally Based Assessment of Persistent Toxic Substances has now been published. Copies of the Regional Report for Region 12: Antarctica by Dr J H Priddle have already been distributed. The Executive Committee welcomed this comprehensive report and congratulated Dr Priddle. It was noted that the report would provide useful baseline data for other assessments, such as the GIWA report (see Agenda Item 10.3) and the SAER in the Antarctic Treaty forum.

10.3 GIWA

C Howard-Williams reported that there was currently uncertainty about the workshop planned to be held in Brazil during 2003 to develop the contribution from the Antarctic region to the Global International Waters

Assessment (GIWA). The possibility was discussed of moving the workshop to Bremerhaven to immediately precede or follow the XXVIII SCAR Science Meeting in Bremen during July 2004. It was recognized that this may actually have some advantages. A decision would be made during the next month once the situation with Brazil has been clarified.

10.4 SO-CIRCLE

C G Rapley reported that Southern Ocean – Climate Interactions, Resources and Carbon Links within the Earth System (SO-CIRCLE) is a European programme proposal under the European Framework 6 funding initiative. SO-CIRCLE has separated into two parts: Antarctic Circumpolar Climate and Ecosystem Study (ACCESS) and Climate variability and anthropogenic forcing of Southern Ocean pelagic ecosystems (ECO-CLIM). ACCESS will address marine Carbon sources while ECO-CLIM will address the impact of climate and anthropogenic forcing on pelagic ecosystems. Regardless of the funding situation, the Alfred-Wegener-Institut (Germany) intends to include a major part of ACCESS within its programmes and the British Antarctic Survey (United Kingdom) will include a major part of ECO-CLIM within its programmes. Nevertheless, a group including 50 research institutes in 14 countries will make a bid for funding under the second call of Framework 6 in late 2003 and another subset will bid under the third call next year. Whatever results from the funding applications, the whole programme will be opened to the wider community outside the European Union.

10.5 CCAMLR

The Executive Committee stressed the importance of maintaining a close liaison with CCAMLR. E S E Fanta is the current SCAR representative to CCAMLR who provides valuable reports on matters of mutual interest. It was suggested that D G M Miller, Executive Secretary of CCAMLR, or R Holt, Chairman of the Scientific Committee of CCAMLR, should be invited to attend SCAR meetings.

10.6 IAG

J López-Martínez reported that the International Geomorphological Congress, organized by the International Association of Geomorphologists (IAG) will be held in Zaragoza, Spain, 7–11 September 2005. It will include a session on Antarctic geomorphology that he has been asked to organize. Information will be forwarded to the SCAR community, particularly during the Ninth International Symposium on Antarctic Earth Sciences (Potsdam, Germany, September 2003) and XXVII SCAR (Bremen, Germany, July 2004 and Bremerhaven, Germany, October 2004).

10.7 IPA

Collaboration between SCAR and the International Permafrost Association (IPA) will benefit from the

establishment of the SCAR Action Group on Permafrost under the SSG on Geosciences. The Action Group will meet during the Seventh International Symposium on Antarctic Glaciology (Milan, Italy, August 2003) and during the Ninth International Symposium on Antarctic Earth Sciences (Potsdam, Germany, September 2003).

11. Finance

11.1 Financial statements for 2002

The SCAR Statement of Income and Expenditure, SCAR Bank Accounts, and National Contributions were tabled. R Schlich, Chairman of the Finance Committee, proposed that the statements be approved after some minor clarification had been made.

11.2 Budgets for 2003 and 2004

The SCAR Budgets for 2003 and 2004, approved at XXVII SCAR, were revised to take account of some essential additional expenditure that was not previously considered. The activities and amounts concerned were:

2003

UNEP Meeting	\$500
History of Oceanography Conference	\$1,500
Glaciological Symposium	\$1,500
Executive Director interviews	\$10,000

2004

Executive Committee Meeting	\$10,000
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The 2003 and 2004 SCAR Budgets will be balanced by the 2003 and 2004 contingencies, and by the saving on Antarctic Data Management and on XXVI ATCM expenses.

11.3 Other matters

The Executive Committee noted with concern the extent of arrears in contributions to SCAR in general and with some members in particular. The Executive Secretary was asked to write to those members with arrears in contributions to remind them of their obligations and to seek early settlement of the outstanding payments.

12. SCAR Constitution and Rules of Procedure

12.1 Constitution

R H Rutford explained to the Executive Committee how he was re-writing and restructuring the SCAR Constitution and Rules of Procedure. He emphasized the importance of keeping the Constitution as brief as possible and placing as much as possible in the Rules of Procedure. He agreed to provide the first draft of the Constitution to the Executive Committee by the end of August 2003 so that a revised final draft can be circulated to National Committees 6 months ahead of the XXVIII SCAR Meeting.

12.2 Rules of Procedure

R H Rutford reported that he is currently taking the "White

Paper" on the Implementation of the SCAR Review and re-casting the relevant parts to form the SCAR Rules of Procedure.

12.3 Rules for SCAR Programme Proposals

The meeting welcomed the draft document prepared by I Allison and C G Rapley and thanked them for the considerable amount of work that they had done. After some discussion, the Chief Officers offered to make some revisions to the document and to provide them to the Secretariat and R H Rutford for inclusion in the Rules of Procedure.

13. Appointment of Executive Director

The *ad hoc* Committee on SCAR Organization and Strategy recommended that SCAR should appoint an Executive Director and the Delegates at XXVII SCAR agreed that the Executive Committee should undertake to do this as soon as possible. The post was widely advertised in April and May 2003, inviting applications from suitably qualified persons.

The Executive Committee reviewed the applications for the position of Executive Director of SCAR. After careful screening, it was agreed that the selected applicants should be invited for interview by the Executive Committee in Cambridge on a date in late August or early October 2003. The Executive Secretary will write to the other applicants, thanking them for their interest, but advising them that they were no longer under consideration.

14. SCAR Fellowship Programme

The Review Panel for the SCAR Fellowship Programme examined 32 applications from 18 different countries covering research proposals in a wide range of disciplines. The styles and standards of applications were very variable, reflecting to some extent the paucity of guidelines provided to applicants.

The panel selected five applicants, each to receive an award of \$10,000. Five reserves were listed in priority order. The Executive Secretary will inform the winners that they will be entitled to style themselves as "SCAR Prince of Asturias Fellows". They will be requested to provide a 5-page statement of their research, to acknowledge the Award in all papers stemming from the research undertaken and to provide copies of those papers to the SCAR Secretariat. They will also be invited to attend the SCAR Science Meeting in Bremen and present the results of their research at a special session. Once the five awards have been accepted all the other applicants will be advised that they have been unsuccessful.

The Review Panel members noted that part of the reason for the wide variation in applications was the low level of guidance and they were requested to suggest how these might be improved and incorporated into the instructions for any future disbursements that may be made.

15. Any other business

15.1 Subgroup on History of Antarctic Research

The request from C Lüdecke for SCAR to establish a subgroup on the History of Antarctic Research was discussed. The Executive Committee welcomed this initiative although recognizing that such a group would not fit easily into the structure of SCAR that is focused on the coordination of natural science in the Antarctic. It was agreed that the Executive Secretary should write to Dr Lüdecke suggesting that SCAR might establish an Action Group under the Delegate Committee on Standing Committees and Outreach. The Action Group might be tasked to prepare a history of research in the Antarctic with particular reference to SCAR and its role. The Group would have a limited lifespan and would be expected to complete its research and prepare a publication by 2007 that would coincide with the close of the new IPY and the 50th Anniversary of SCAR.

15.2 Additional meeting of the SCAR Executive Committee

It was proposed that there should be a short additional meeting of the Executive Committee in Cambridge during which the candidates for the post of Executive Director will be interviewed. The first choice will be late August

2003 with an alternative in early October.

It was also proposed that there should be a further meeting of the Executive Committee and the Chief Officers in late January 2004 to prepare for the XXVIII SCAR Science Meeting. The date and place of this meeting will be determined nearer the time.

15.3 SCAR Awards

Following the establishment of the SCAR Prince of Asturias Fellowship, there was a general discussion about other ways in which SCAR might recognize young scientists who have made outstanding contributions to Antarctic science. Several ideas were proposed including the establishment of a SCAR medal for excellence in Antarctic research and an award for a young scientist. The Executive Committee was asked to consider these possibilities for further discussion.

15.4 Communication

The meeting agreed that the participation of the Chief Officers in the meeting of the Executive Committee had proved to be extremely effective and that this close communication should be continued. It was also suggested that the level of involvement of National Committees in SCAR activities should be improved.

Appendix 1

Joint Meeting of the SCAR and COMNAP Executive Committees Brest, France, 11 July 2003

Draft Report

Opening formalities

K A Erb took the chair and opened the meeting.

Present:

COMNAP: K A Erb (Chairman); G Jugie (Chairman elect); O Watanabe, J Berguño; K A Pitt (Chairman, SCALOP); J C A Sayers, A Guichard (Executive Secretaries).

SCAR: J Thiede (President); R H Rutford (Past-President); C G Rapley, J López-Martínez, C Howard-Williams (Vice-Presidents); A Capra (Deputy Chief Officer, SSG Geosciences); S L Chown (Chief Officer, SSG Life Sciences); P D Clarkson (Executive Secretary).

The Chairman began by outlining recent COMNAP activities including the results of the elections to the Executive Committee held earlier in the week. G Jugie and M Augner were elected COMNAP and SCALOP Chairmen, respectively, (who will assume their positions from the COMNAP XVI meeting in July 2004), and J Berguño was elected as an additional member; A Guichard who will succeed J C A Sayers as Executive Secretary in September 2003.

J Thiede responded by outlining recent developments in the reorganization of SCAR that will be completed at XXVIII SCAR in July and October 2004. C G Rapley spoke of the improved communications between SCAR groups and R H Rutford reported the importance and effectiveness of including the SCAR Scientific Standing Group and Standing Committee Chief Officers in the SCAR Executive Meeting.

1. Data issues and the AMD

The meeting confirmed that the remaining payment to the NASA GCMD for work undertaken developing the AMD during the period July 2001 to December 2002 should be paid.

K A Erb noted that D Peterson, Chairman of JCADM, had met with an *ad hoc* COMNAP working group that had subsequently recommended COMNAP to continue funding the GCMD. COMNAP then discussed JCADM in plenary session and, while a variety of opinions was expressed, there was adequate support for the AMD project. K A Erb proposed to the Joint Executive Meeting that COMNAP would be prepared to pay one third (US \$ 3,333) of the US \$ 10,000 per annum to the GCMD to continue to maintain and populate the AMD, contingent on SCAR support for the activity and subject to a satisfactory proposal from D Peterson as Chairman of JCADM. The balance of US \$ 6,667 would be paid by SCAR. This was agreed.

The proposal from D Peterson should include a statement of the work programme for the coming year and indicate clearly the targets to be achieved. JCADM would be required to provide annual reports to SCAR and COMNAP showing progress against previously established milestones.

The meeting agreed that STADM was still required to provide SCAR and COMNAP with independent oversight of the work done by the GCMD. STADM should report annually on the maintenance and effectiveness of the AMD. The membership of STADM should be one third COMNAP and two-thirds SCAR. D Peterson would need to be replaced now that he is Chairman of JCADM.

The meeting noted that the members of the Joint (SCAR–COMNAP) Committee on Antarctic Data Management (JCADM) are representatives (normally the managers) of the National Antarctic Data Centres (NADCs). The role of the Steering Committee for Antarctic Data Management (STADM) is to monitor progress on the development of the Antarctic Master Directory (AMD) and to provide SCAR and COMNAP with an independent assessment of the effectiveness of the current arrangements with the Global Change Master Directory (GCMD).

2. ATCM issues

The success of the SCAR presentation to XXVI ATCM was recognized and SCAR confirmed its intention to provide a similar presentation to XXVII ATCM in May–June 2004. K A Erb noted that he had heard many favourable comments from members of delegations and that COMNAP hoped to assist with preparations for subsequent presentations. He continued that COMNAP did not intend to propose a separate presentation but said that a scientific presentation that also conveyed a sense of the necessary associated logistics and operational support could make the presentation even more meaningful to Delegates. The joint Executive Committees agreed that this concept had merit and that they would seek to implement it.

K A Erb noted that COMNAP had been asked by CEP to review an earlier working paper submitted by the UK to the ATCM considering the operation of aircraft in proximity to concentrations of birds in the Antarctic, and that a COMNAP working group was now proposing a guideline with a standard limit of 500 m. K A Erb commented that this was only partly an operational issue and that SCAR input would be important. SCAR offered to request the Expert Group on Birds to provide advice to COMNAP on this matter prior to presentation of a paper to XXVII ATCM.

K A Erb also noted that COMNAP and SCAR had been asked by the ATCM to suggest indicators for the state of the Antarctic environment to be considered by a CEP intersessional contact group. He reported that COMNAP had discussed a number of possibilities including temperatures, waste retrograded from Antarctica compared to tonnage carried in and, perhaps, an indicator associated with fuel. COMNAP also expressed interest in the use of aerial photography and satellite imagery series over the longer term to show changes in the “footprint” of activities, particularly around stations. SCAR agreed that this would be a useful approach and suggested that changes in ice cover could also be incorporated.

K A Erb reminded the meeting that XXVI ATCM had proposed that a workshop on tourism should be held in Tromsø later this year and that SCAR and COMNAP had been invited to participate. SCAR explained that it did not normally have any involvement with the tourist industry and COMNAP expressed that its main concern is the disruption to programmes when help needed to be given to adventure tourism activities. It was agreed that both Executive Committees would follow the development of the workshop planning and decide on possible representation in due course.

SCAR reported on the establishment of an Expert Group to continue the study of the impacts of marine acoustic techniques in the Antarctic environment and asked if COMNAP could help to identify potential members of the group.

3. Potential SCAR programmes

COMNAP noted the important role that SCAR played in evaluating the scientific content of recent CEEs submitted by national programmes to the ATCM and also recognized the considerable work done by SCAR in advising on the scientific content of new and revised draft management plans for Antarctic Specially Protected Areas (ASPAs). COMNAP also welcomed the continuing provision of advance information from SCAR on proposed programmes that would require major logistic operations. In this respect, C G Rapley was thanked for his earlier presentation on the current state of preparation for the IPY in 2007–08.

4. Medical issues

K A Erb reported on the establishment of a medical

officers network, led by C Bachelard (France), working by e-mail on medical screening standards. A Coordinating Group, chaired by J R Dudeney, will oversee this work. It was emphasized that Terms of Reference for the network and the Group would focus on operational issues only and

would not be concerned with medical research. SCAR and COMNAP should exchange membership lists of the COMNAP network and the SCAR Expert Group.

No further issues of common concern were raised and the meeting was closed.

List of Acronyms and Abbreviations

ACCESS	Antarctic Circumpolar Climate and Ecosystem Study	IASC	International Arctic Science Committee
ACE	Antarctic Climate Evolution (see CACE below)	ICESTAR	Interhemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research
ACOS	Antarctic Climate Observing System	ICPM	International Commission on Polar Meteorology
AGCS	Antarctica and the Global Climate System	ICSU	International Council for Science
AMD	Antarctic Master Directory	IODP	Integrated Ocean Drilling Program
ANDRILL	Antarctic Geological Drilling Project	IPA	International Permafrost Association
ANTEC	Group of Specialists on Antarctic Neotectonics	IPY	International Polar Year
ASPA	Antarctic Specially Protected Area	IUGG	International Union of Geodesy and Geophysics
ATCM	Antarctic Treaty Consultative Meeting	JCADM	Joint Committee on Antarctic Data Management
BAS	British Antarctic Survey	NASA	National Aeronautical and Space Administration
CACE	Cenozoic Antarctic Climate Evolution (see ACE above)	RiSCC	Regional Sensitivity to Climate Change in Antarctic Terrestrial and Limnetic Ecosystems
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources	SAER	State of the Antarctic Environment Report
CEE	Comprehensive Environmental Evaluation	SALE	Subglacial Antarctic Lake Exploration
CEP	Committee for Environmental Protection	SALEGOS	Subglacial Antarctic Lake Exploration Group of Specialists
ChC	Climate and Cryosphere	SCALOP	Standing Committee on Antarctic Logistics and Operations
COMNAP	Council of Managers of National Antarctic Programmes	SCAR	Scientific Committee on Antarctic Research
COSPAR	Committee on Space Research	SC-ATS	Standing Committee for the Antarctic Treaty System
EASIZ	Ecology of the Antarctic Sea-Ice Zone	SCOR	Scientific Committee on Oceanic Research
EBA	Evolutionary Biology of Antarctica	SCOSTEP	Scientific Committee on Solar-Terrestrial Physics
ECO-CLIM	Climate variability and anthropogenic forcing of Southern Ocean pelagic ecosystems	SO-CIRCLE	Southern Ocean – Climate Interactions, Resources and Carbon Links within the Earth System
ENSO	El Niño – Southern Oscillation	SSG	Standing Scientific Group
EVOLANTA	Evolutionary Biology of Antarctic Organisms	STADM	Steering Committee for Antarctic Data Management
GCMD	Global Change Master Directory	UNEP	United Nations Environment Programme
GIWA	Global International Waters Assessment	WMO	World Meteorological Organization
IAG	International Association of Geomorphologists		
IAMAS	International Association of Meteorology and Atmospheric Sciences		

XXVIII SCAR Science Week

Bremen, Germany, 25–31 July 2004

Antarctica and the Southern Ocean in the Global System

The Open Science Conference will take place at the Congress Centre, Bremen, Germany 26–28 July 2004. The Conference will be held in conjunction with the biennial meeting of SCAR's Standing Scientific Groups (XXVIII SCAR) and the annual meeting of the Council of Managers of National Antarctic Programmes (COMNAP XVI).

SCAR invites all scientists who are interested both in Antarctica and in the Southern Ocean to participate in the Open Science Conference in order to present their latest discoveries. It is anticipated that the results of the conference will influence the planning of SCAR's future Antarctic research programmes.

The Antarctic is now recognised as a vital element of the Earth system with strong atmospheric, oceanic, geological and biological links to conditions in the extra-polar regions. Recent rapid climate change in the Antarctic and the discovery of the Antarctic ozone hole have focused attention on the role of the continent in the global climate system and made scientists and the general public aware of possible human impact on the environment. Although the Antarctic is remote, it holds the longest ice core record of past climate available on Earth, has remarkable marine biodiversity and even, as yet unexplored lakes under the ice sheet.

The Conference will review our present understanding of the close couplings between the Antarctica, the Southern Ocean and other parts of the Earth System. Cross-disciplinary presentations are particularly welcome, as well as papers on Arctic-Antarctic linkages, requirements for new data, observational and modelling studies and activities linked to other international programmes.

The conference will consist of keynote presentations, cross-disciplinary sessions, more specialised parallel symposia and poster sessions. Oral presentations and posters are particularly welcome from students.

Papers are requested on all aspects of Antarctica and the Southern Ocean as related to the Earth System.

We particularly welcome papers on:

- Variability and change in the Antarctic Biota: molecules to ecosystems
- Pelagic predators and the Southern Ocean System
- Structure and function of Southern Ocean Ecosystems
- Evolution of the Antarctic biota
- Ecology of the Antarctic sea-ice zone
- Human responses to the Antarctic Environment
- Ocean-atmosphere interactions
- Climate history of the Antarctic
- Astronomy from the Antarctic
- Arctic-Antarctic conjugacy
- Evolution of the Antarctic and Southern Ocean climate and biota: the geological record
- Antarctic neotectonics and geodesy
- Growth of the Antarctic continent
- Antarctic permafrost
- Management and application of Antarctic geospatial information
- Antarctica: From data management to information portals
- Open Science Session (Geoscience, Life and Physical)

Abstracts of talks or posters must be submitted by 15 January 2004 via the conference website:

<http://www.scar28.org>

XXVIII SCAR Delegates Meeting

Bremerhaven, Germany, 3–9 October 2004

The SCAR Delegates Meeting will be held at the Alfred-Wegener-Institut für Polar- und Meeresforschung and at the Historisches / Morgenstern Museum, Bremerhaven. The duration of the meeting will ultimately be determined by the agenda and by the reports of the XXVIII SCAR Science Meeting; it may thus terminate before 9 October

SCAR Prince of Asturias Fellowship Awards

In October 2002, the prestigious Prince of Asturias Award for International Cooperation 2002, was awarded to the Scientific Committee on Antarctic Research (SCAR) in recognition of its role in coordinating scientific research in Antarctica.

At the XXVII SCAR Meeting in Shanghai, China, the Delegates agreed that the € 50,000 prize should be used to establish a Fellowship with the aim of motivating highly qualified young researchers into Antarctic science. Applications would be invited from young scientists in SCAR member countries to undertake an Antarctic research project in a country other than their own. The five best applicants would each be awarded a grant of \$10,000 to carry out the proposed research and they would be entitled to style themselves "SCAR Prince of Asturias Fellows".

SCAR received thirty-two applications from scientists in eighteen countries across a broad range of disciplines and subject areas. After careful consideration by the Review Panel the following have been selected as SCAR Prince of Asturias Fellows for 2003:

Dr Elanor M Bell

Home institution: Department of Ecology and Ecosystem Modelling
University of Potsdam, Germany
Research topic: The diversity and tropho-dynamics of mixotrophic protests in Antarctic coastal waters
Host institution: Australian Antarctic Division
Kingston, Australia

Dr Steven Boger

Home institution: School of Earth Sciences
University of Melbourne, Australia
Research topic: Mesozoic evolution of the Lambert Graben, Mac.Robertson Land
Host institution: Geologie der Polargebiete, Geowissenschaften
Universität Bremen, Germany

Ms Barbara Delmonte

Home institution: University of Siena, Italy
Research topic: Millennial and secular periodicities in Antarctic atmospheric circulation during the Holocene
Host institution: Laboratoire de Glaciologie et Geophysique de l'Environnement
St Martin d'Hères, France

Assistant Professor Cai Minghong

Home institution: Polar Research Institute of China, Shanghai, China
Research topic: Ice shelf – ocean interaction at the Amery Ice Shelf, Mac.Robertson Land
Host institution: Antarctic Climate and Ecosystems Cooperative Research Centre
Hobart, Australia

Dr Cristina Sobrino

Home institution: Instituto de Ciencias Marinas de Andalucía, Spain
Research topic: Phytoplankton photosynthetic kinetics of damage and repair in vertically mixed Antarctic waters
Host institution: Smithsonian Environmental Research Center
Edgewater, United States

The Fellows will be invited to attend the international XXVIII SCAR Science Week in Bremen, Germany, 25–31 July

SCAR Bulletin

SCAR Bulletin, a quarterly publication of the Scientific Committee on Antarctic Research, is published on behalf of SCAR by Polar Publications, at the Scott Polar Research Institute, Cambridge. It carries reports of SCAR meetings, summaries of meetings of SCAR subsidiary groups, notes, reviews, and articles, and material from Antarctic Treaty Consultative Meetings, considered to be of interest to a wide readership. Selections are reprinted as part of Polar Record, the journal of SPRI, and a Spanish translation is published by Instituto Antártico Argentino, Buenos Aires, Argentina.

Polar Record

Polar Record appears in January, April, July, and October each year. The Editor welcomes articles, notes and reviews of contemporary or historic interest covering the natural sciences, social sciences and humanities in polar and sub-polar regions. Recent topics have included archaeology, biogeography, botany, ecology, geography, geology, glaciology, international law, medicine, human physiology, politics, pollution chemistry, psychology, and zoology.

Articles usually appear within a year of receipt, short notes within six months. For details contact the Editor of Polar Record, Scott Polar Research Institute, Lensfield Road, Cambridge CB2 1ER, United Kingdom
Tel: 01223 336567 (International: +44 1223 336567)
Fax: 01223 336549 (International: +44 1223 336549)

The journal may also be used to advertise new books, forthcoming events of polar interest, etc.

Polar Record is obtainable through the publishers, Cambridge University Press, Edinburgh Building, Shaftesbury Avenue, Cambridge CB2 2RU, and from booksellers. Annual subscription rates for 2004 are: for individuals £61.00 (\$98.00), for institutions £132.00 (\$210.00); single copies cost £32.00 (\$51.00).

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