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Antarctic Research, Shanghai, China, 22–26 July 2002 p 1

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Shanghai, China, 16–18 July 2002 p13



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THE INTERNATIONAL COUNCIL FOR SCIENCE  
SCIENTIFIC COMMITTEE ON ANTARCTIC RESEARCH

**SCAR BULLETIN**

**No 149, April 2003**

**Twenty-seventh Meeting of SCAR  
Shanghai, China, 22–26 July 2002**

*Executive Committee:* R H Rutford (President); A C Rocha-Campos (Past President); J A Valencia, A D M Walker, R Schlich, C G Rapley (Vice-Presidents); P D Clarkson (Executive Secretary).

*Delegates:* P Skvarca, (Argentina); I Allison, D M Stoddart (Australia); H Declair, C De Broyer (Belgium); A C Rocha-Campos, (Brazil); S C Bigras, O Loken (Canada); J A Valencia, A J Foppiano (Chile); Z Zhang, L Chen, (China); M Proaño (Ecuador); P Taalas (Finland); J-C Hureau, R Schlich (France); J Thiede, G Kleinschmidt (Germany); H K Gupta, P C Pandey (India); A Meloni, M Candidi (Italy); H Shimamura, K Shiraishi (Japan); B-Y Park, S-H Lee (Korea); A H L Huiskes, J H Stel (Netherlands); F J Davey, C Howard-Williams (New Zealand); O Orheim, A S Blix (Norway); R F Woodman (Peru); A Gazdzicki (Poland); V M Kotlyakov, M Yu Moskalovsky (Russia); A D M Walker, H Valentine (South Africa); J L López-Martínez, L G Sancho (Spain); D U Hedberg (Sweden); C G Rapley, J A Dowdeswell (United Kingdom); R H Rutford, M C Kennicutt II (United States); B Grillo, A Lluberas (Uruguay).

*Union Members:* G A Knox (IUBS); R Schlich (IUGG); C A Ricci (IUGS); V M Kotlyakov (IGU); D J Lugg (IUPS).

*Associate Members:* C Pimpirev (Bulgaria); C Schlüchter (Switzerland); G P Milinevsky (Ukraine).

*Observers:* H A Hutchinson (WMO); P Egerton (EPB), A A Samah (Malaysia).

*SCAR Subsidiary Groups*

*Working Groups:* A H L Huiskes (Biology); J Manning (Geodesy and Geographic Information); P E O'Brien (Geosciences); A Peri (Human Biology and Medicine); J Turner (Physics and Chemistry of the Atmosphere); M Candidi (Solar-Terrestrial and Astrophysical Research).

*Groups of Specialists:* A H L Huiskes (Global Change and the Antarctic); D W H Walton (Environmental Affairs and Conservation); A S Blix (Seals); T J Wilson (Antarctic Neotectonics).

*SCAR-COMNAP Joint Committee:* D B Peterson (Antarctic Data Management).

*Scientific Standing Groups:* J Turner (Physical Sciences); P E O'Brien (Geosciences); A H L Huiskes (Life Sciences).

*Advisors:* C Bachelard (France); D Damaske, H Miller (Germany); S C Jain, R P R Muthya (India); P J Barrett (New Zealand); D W H Walton (United Kingdom); C Elfring (United States); N Chipev (Bulgaria).

**Formal Opening of the Meeting**

Dr R H Rutford, President of SCAR, opened the meeting and expressed his great pleasure to be meeting in Shanghai. He thanked the State Oceanic Administration, the Shanghai Municipality, the Chinese Arctic and Antarctic Administration, and the Polar Research Institute of China for hosting the meeting and providing the excellent facilities and staff support in the Shanghai Exhibition Centre.

**1. Opening business**

*1.1 Adoption of the Agenda*

The President invited Delegates to adopt the draft Agenda for the meeting and, hearing no objections, the Agenda was adopted.

*1.2 Peruvian application for Full Membership*

The President invited the Delegate of Peru, Professor R F Woodman, to present the application of Peru for Full Membership of SCAR. Professor Woodman drew attention to some highlights of the Peruvian programme in the Antarctic to supplement the written application. While the Peruvian Delegate and observers withdrew from the meeting, various Delegates spoke in support of the Peruvian application. There being no dissension, the President invited the Peruvian Delegate and observers to return to the meeting and announced that Peru had been elected to Full Membership of SCAR.

*1.3 Romanian application for Associate Membership*

The Executive Secretary reported that an enquiry had been received from Romania and details of the application

procedure were sent but no formal application had been received.

#### 1.4 *Prince of Asturias Award*

SCAR has won a major award for its work in Antarctica. The jury for the Prince of Asturias Award for International Cooperation 2002, in bestowing the honour for international collaboration in Antarctica on SCAR, "expressed its satisfaction at being able to recognize such important cooperation for the benefit of the international scientific community".

The Awards were established in 1980 by the Prince of Asturias Foundation, a non-profit institution that aims to promote the Sciences, Technology, Concord, Arts and Letters. HRH Crown Prince Felipe of Spain, the Prince of Asturias, presides over the Foundation and presents the awards annually at a symbolic ceremony in Asturias, Spain, before an invited audience from the worlds of society, politics and culture in Europe, Japan and the Americas. The ceremony attracts extensive international press, radio and television coverage and is considered one of the principal events in the European and Latin American cultural calendar.

There are eight different Prince of Asturias Awards: Communications and Humanities; Letters; the Arts; Technical and Scientific Research; International Cooperation; Concord; Social Sciences; and Sports. The Awards recognize the scientific, cultural and social work conducted internationally by individuals, groups and institutions whose achievements represent an example for mankind. Each Award comprises a diploma, a sculpture by the Spanish artist Joan Miró and a cash prize of 50,000 Euros.

Previous Prince of Asturias Award for International Cooperation award-winners have been, among others, Mikhail Gorbachev, Nelson Mandela, Helmut Kohl and the International Space Station.

Delegates agreed to the proposal that the prize money should be used to offer five grants of 10,000 Euros each for a young scientist from a SCAR country to work on an Antarctic project at an institute in a country other than his or her own country. A small group was established to develop the detailed terms of the grants and these will be advertised on the SCAR website (<http://www.scar.org>) in due course.

## 2. Reports of SCAR Meetings

### 2.1 *Reports of XXVI SCAR*

The Report of the XXVI SCAR Delegates Meeting held in Tokyo, Japan (17–21 July 2000) was published in *SCAR Bulletin* no 141, April 2001, and the Summary Reports of the Working Group meetings (10–14 July 2000) were published in *SCAR Bulletin* no 142, July 2001. These reports were formally approved by the Delegates.

### 2.2 *Report of Executive Committee Meeting*

The Report of the SCAR Executive Committee Meeting held in Amsterdam, The Netherlands (22–24 August 2001) together with a Joint Meeting of the SCAR and COMNAP Executive Committees (22 August 2001) was published in *SCAR Bulletin* no 145, April 2002. These reports were formally approved by the Delegates.

## 3. SCAR Positions

### 3.1 *Election of President*

Dr R H Rutford, completed his 4-year term of Office as President of SCAR. Professor Dr J Thiede (Germany) was elected President of SCAR.

In recognition of his long service on the Executive Committee and his contribution to SCAR over many years, the retiring Past-President, Professor A C Rocha-Campos, was elected an Honorary Member of SCAR by acclamation.

### 3.2 *Election of two Vice-Presidents*

Dr J Valencia and Professor A D M Walker completed their 4-year terms of Office as Vice-Presidents of SCAR. Dr J López-Martínez (Spain) and Dr C Howard-Williams (New Zealand) were elected Vice-Presidents of SCAR.

### 3.3 *Appointment of Delegate Committees*

After some discussion, the Delegates agreed that at this meeting there should be two Delegate Committees: on Scientific Affairs, and on Standing Committees. These two Committees were chaired by C G Rapley and R H Rutford, respectively.

### 3.4 *Appointment of Standing Finance Committee*

Professor S L Chown had resigned from the Standing Finance Committee. The Executive Committee proposal that Dr S-H Lee be appointed to serve on the Committee, with R Schlich (Chairman) and G Kleinschmidt, was confirmed by the Delegates. However, the Delegates proposed that the members of the Finance Committee should be elected by the Delegates and it was agreed that this proposal should be incorporated into the SCAR Rules of Procedure when they are revised prior to XXVIII SCAR in 2004.

### 3.5 *Appointment of XXVII SCAR Finance Committee*

The Standing Finance Committee was augmented by the appointment of Professor P Taalas and Dr F J Davey to complete the XXVII SCAR Finance Committee.

## 4. Meetings of SCAR Subsidiary Groups, and COMNAP and SCALOP

Summary reports of meetings held in Shanghai, China, immediately prior to the XXVII SCAR Delegates Meeting were presented by the Chief Officers or their representatives (see above for the list of SCAR Subsidiary Groups represented) as follows:

*Working Groups:* Biology, Geodesy and Geographic

Information, Geosciences, Human Biology and Medicine, Physics and Chemistry of the Atmosphere, and Solar-Terrestrial and Astrophysical Research.

*Groups of Specialists:* Seals, Antarctic Neotectonics, and Subglacial Antarctic Lake Exploration..

*SCAR-COMNAP Joint Committee:* Antarctic Data Management

*Federated to SCAR:* Council of Managers of National Antarctic Programmes (COMNAP)

In addition, a written report of the meeting of the Groups of Specialists on Environmental Affairs and Conservation was presented by the Convenor. The report of the Group of Specialists on Global Change and the Antarctic was taken at Agenda Item 5 (see below).

#### 4.1 Reports of Working Groups

A H L Huiskes, on behalf of the Chairman, Y LeMaho, introduced the report of the Working Group on Biology. Scientific and environmental matters related to the ATCM were discussed and draft papers were reviewed. Reports were received on the EASIZ and RiSCC programmes, from the subcommittees on Bird Biology and on the Evolutionary Biology of Antarctic Organisms, and from the Group of Specialists on Seals and its APIS programme. Two offers to host the 9<sup>th</sup> Antarctic Biology Symposium in 2005 had been received.

J Manning, Chairman of the Working Group on Geodesy and Geographic Information, presented a report on progress with the principal activities of the Group. These included the Geodetic Infrastructure for Antarctica (GIANT) Programme; the Geographic Information Programme (GIP); and the Outreach Programme. He also reported that SCAR is now a Class A liaison member to the International Standards Organization – Technical Committee (ISO–TC) 211 that has a mandate to develop an integrated set of standards for geographic information.

P E O'Brien presented the report of the Working Group on Geosciences. The group had identified the following major issues to be addressed by the Standing Scientific Group on Geosciences: Antarctic neotectonics; climate and environmental change; observatory geophysics; subglacial lakes; subice geology; Antarctic basement geology; permafrost and surficial processes; geological and geophysical data exchange and management; environmental impacts of marine acoustic technology; and Antarctic continental margin evolution. A proposal for a new international research initiative to study the climate and glacial history of Antarctica through palaeoclimate and ice-sheet modelling investigations (Antarctic Climate Evolution (ACE)) was presented.

The report of the Working Group on Glaciology was introduced by J Turner on behalf of Qin Dahe, the Chief Officer. A key activity of the meeting was discussion of reports on various glaciological programmes and projects including SALE, PICE, ISMASS, VELMAP, GLASS, FRISP, EPICA, WAIS, ITASE, ASPeCt and IDEA. The 7th International Symposium on Antarctic Glaciology will

be held in Milano, Italy, 25–29 August 2003.

A Peri presented the report of the Working Group on Human Biology and Medicine. Comprehensive reports on polar medical practice were presented by National Representatives and discussions had ranged across a large number of emergent topics. Reports were given on current and new initiatives covering a wide range of fundamental and applied research. The presentation of work on "Guidelines for Health Care Services in Antarctica" was welcomed and publication of the national standards and procedures in use for medical screening was proposed.

J Turner reported on the activities of the Working Group on Physics and Chemistry of the Atmosphere. Short scientific symposia were held on "Progress with understanding the Antarctic ozone hole" and "Antarctic climate change over the last 50 years – results of the SCAR READER project". PACA proposed to extend the READER project for a further two years under the Physical Sciences SSG so that upper air data can also be collected and analysed. The project will end in 2004. PACA was also involved in the planning of the SCAR symposium on "The Antarctic sea ice zone – Physical and biological processes and interactions".

M Candidi, Chairman of the Working Group on Solar-Terrestrial and Astrophysical Research, reported to the Delegates. An astronomy symposium comprised nine papers on various subjects, ranging from cosmic background radiation observations to infrared astronomy programmes, to solar observation programmes and neutrino detection experiments; a Solar-Terrestrial Physics symposium comprised 31 papers covering the conjugacy of phenomena among the two hemispheres; satellite observations and their relation to Antarctic observations of geospace; reports from national programmes and reports from some ground-based radar arrays and geospace observatories.

The Delegates adopted all these reports and the President thanked the Chief Officers for their presentations, noting that these would be the final reports from the SCAR Working Groups, prior to their re-organization into Standing Scientific Groups.

#### 4.2 Reports of Groups of Specialists

A S Blix reported on the meeting of the Group of Specialists on Seals held in Shanghai immediately prior to XXVII SCAR. In particular, he reviewed the returns under the Convention for the Conservation of Antarctic Seals (CCAS) and reported on specially protected species in relation to Annex II of the Protocol. He outlined progress in the Antarctic Pack Ice Seals (APIS) Programme with respect to the circumpolar survey of abundance and distribution of seal species and the future work of APIS. He summarized the work of the Group of Specialists on Seals and spoke of the proposal to establish a new seals group under the Life Sciences SSG.

D W H Walton, Convenor of the Group of Specialists on Environmental Affairs and Conservation (GOSEAC),

reported on the GOSEAC XII meeting held in April 2002. The Group had provided comments on scientific aspects of eleven draft protected area management plans; considered a draft Working Paper for the scoping exercise for a State of the Antarctic Environment Report; and prepared and contributed to draft papers for submission by SCAR to XXV ATCM.

T J Wilson (Convenor) reported on the activities of the Group of Specialists on Antarctic Neotectonics (ANTEC). These included a Workshop on ANTEC science objectives and implementation strategies; presentations at EGS and AGU international symposia, and a major poster session at XXVII SCAR. She outlined a wide range of research programme achievements, planned research programme activities, and plans for several future symposia and workshops during the next two years.

M C Kennicutt, Secretary of the Group of Specialists on Subglacial Antarctic Lake Exploration, gave a brief account of the Group's activities. The first meeting had been held in Bologna, Italy in November 2001 and a second meeting had been held in Palisades, New York in May 2002. Many new remote-sensing data had been gathered around Lake Vostok. The Group had considered a proposal to drill a further 50 m into the accreted ice above Lake Vostok and had sought additional advice from experts outside the Group. A SCAR Recommendation (XXVII-20) supports further study before the additional drilling is undertaken in the existing borehole.

#### 4.3 Reports of other subsidiary groups

M R Thorley, Chairman of the SCAR-COMNAP Joint Committee on Antarctic Data Management (JCADM) reported on progress in the continuing development of the Antarctic Master Directory (AMD). The number of metadata records had increased by 79% in the past 14 months, and the number of "hits" in the first quarter of 2002 had increased by 200% of the corresponding period in 2001. The Committee proposed that, following completion of the development work by the end of 2002, SCAR and COMNAP should continue to fund the GCMD to operate and support the AMD for the benefit of both the Antarctic scientific and operational communities. (See also Appendix 3, item 2.)

#### 4.4 Reports of COMNAP and SCALOP

O Orheim presented the following report on behalf of K A Erb, Chairman of COMNAP.

At the XIV COMNAP meeting the following Working Papers were developed in response to requests from XXIV ATCM:

- Worst case and less than worst case scenarios for environmental emergencies;
- A review of Initial Environmental Evaluations (IEEs);
- Best practice to avoid waste water discharges in ice-free inland areas;
- Revision of a previous Working Paper on environ-

mental emergencies incorporating new data.

COMNAP also developed Information Papers on:

- Practical guidelines for environmental emergencies.
- Tourism issues relevant to National Antarctic Programmes;

The Foreign and Commonwealth Office (FCO) of the United Kingdom had asked several questions concerning Antarctic Shipping; responses to these were prepared.

Offers to host the COMNAP Secretariat had been invited. The offer from the State of Tasmania to host the Secretariat from September 2003 was accepted. The current Executive Secretary Mr. Jack Sayers will retire at this time and will be succeeded by Dr Antoine Guichard.

The Joint (SCAR-COMNAP) Committee on Antarctic Data Management had submitted a report for funding to allow the Global Change Master Directory (GCMD) to continue developing and populating the Antarctic Master Directory. In response, COMNAP decided:

- a. that insufficient information had been provided in the proposal to determine the long term value of the project to the National Operators (i.e. COMNAP).
- b. that the main value is to the science community and thus it is primarily an issue for SCAR
- c. that if SCAR decides to continue funding beyond December 2002 when the current funding for the GCMD expires, then the COMNAP Executive would be prepared to provide modest bridge funding, provided that a more informative proposal is received in time for analysis, discussion and decision before December 2002.
- d. That the question of continued funding beyond December 2003 would need to be considered by the COMNAP Plenary in Brest, France, 8-12 July 2003.

The COMNAP XV Meeting will be in Brest when AEON had been encouraged to hold an environmental education and training workshop in conjunction with COMNAP's education and training network (TRAINET).

#### 4.5 Reports of Scientific Standing Groups (SSGs)

The implementation of the re-organization of the SCAR structure required that the existing Working Groups and Groups of Specialists be amalgamated into three new Standing Scientific Groups. Brief reports of the Chief Officers of these new groups, that met on 18 and 19 July 2002, are given here, listing the new officers of each group and the various subsidiary groups established under each Standing Scientific Group.

Delegates noted that the provision in the implementation document for "Action Groups" with a limited lifespan as the principal type of sub-group of an SSG did not accommodate instances where a much longer or even unlimited lifespan may be needed. As a result, Delegates agreed that an additional type of sub-group, an "Expert Group", could be established where a long-term need for a sub-group was perceived.

### *Geosciences SSG*

P E O'Brien (Australia) was elected Chief Officer, A Capra (Italy) Deputy Chief Officer and B C Storey (New Zealand) Secretary.

The SSG established the following subsidiary groups:

- Scientific Programme Group – Antarctic Neotectonics (ANTEC)
- Scientific Programme Group – Subglacial Antarctic Lake Exploration (SALE)
- Science Programme Planning Group – Antarctic Climate Evolution (ACE)
- Action Group – Age, Growth and Evolution of Antarctica (AGEANT)
- Action Group – Permafrost (PAG)
- Action Group – Communication and Outreach
- Expert Group – Geospatial Information

### *Life Sciences SSG*

S L Chown (South Africa) was elected Chief Officer, L Palinkas (United States) Deputy Chief Officer and A H L Huiskes (The Netherlands) Secretary. Delegates agreed that G di Prisco should serve as an additional Deputy Chief Officer until XXVIII SCAR in 2004 to facilitate the process of transition.

The Life Sciences SSG made a specific request to the Delegates meeting for the addition of a second Deputy Chief Officer from the marine biological community. After considerable discussion, the Delegates agreed that, exceptionally, a second Deputy Chief Officer could be appointed for the next 2 years until XXVIII SCAR to facilitate the continuing process of transition. Therefore, the appointment of G di Prisco was approved by the Delegates.

The SSG established the following subsidiary groups with the approval of Delegates:

- Scientific Programme Group – APIS
- Scientific Programme Group – EASIZ
- Scientific Programme Group – RiSCC
- Scientific Programme Group – EVOLANTA
- Scientific Programme Planning Group – to study integration of the RiSCC, EVOLANTA and EASIZ programmes
- Scientific Programme Planning Group – Evolution and Biodiversity in Antarctica: The Response of Life to Change
- Action Group – Global International Waters Assessment (Area 66 – the Antarctic)
- Action Group – Best Practice in Conservation
- Action Group – to organize a workshop on Biological Monitoring
- Expert Group – Seals
- Expert Group – Bird Biology
- Expert Group – Human Biology and Medicine

### *Physical Sciences SSG*

J Turner (United Kingdom) was elected Chief Officer, M Candidi (Italy) Deputy Chief Officer and T H Jacka

(Australia) Secretary.

The SSG established the following subsidiary groups:

- Scientific Programme Planning Group – Interhemispheric Conjugacy in Environmental, Solar-Terrestrial and Atmospheric Research (ICESTAR);
- Scientific Programme Planning Group – Antarctica and the Global Climate System;
- Action Group – Plateau Astronomy Site Testing in Antarctica (PASTA);
- Action Group – Middle Atmosphere Dynamics and Relativistic Electron Precipitation (MADREP);
- Action Group – Antarctic Peninsula Tropospheric-Ionospheric Coupling (APTIC);
- Action Group – Oceanography;
- Action Group – READER;
- Action Group – Antarctic Katabatic Winds;
- Action Group – Antarctic Tropospheric Aerosols and their Role in Climate (ATAC);
- Expert Group – Operational Meteorology in the Antarctic;
- Expert Group – ISMASS;
- Expert Group – ITASE;
- Expert Group – ASPECT;
- Expert Group – Solar-Terrestrial Processes and Space Weather (STEPS);
- Expert Group – Antarctic Astronomy and Astrophysics (AAA);

### *4.6 Review of SCAR Recommendations*

Delegates reviewed the recommendations adopted at XXVI SCAR and agreed that 12 of these should be revised and re-adopted as XXVII SCAR recommendations. Delegates also adopted seven new SCAR recommendations. The list of XXVII SCAR Recommendations is shown in Appendix 2.

## **5. SCAR Global Change Research**

### *5.1 Group of Specialists on Global Change and the Antarctic*

The Group of Specialists on Global Change and the Antarctic (GLOCHANT) was established at XXII SCAR (Bariloche, Argentina, June 1992) and at this meeting will have been in operation for 10 years, the normal life-span for a Group of Specialists. A H L Huiskes, the Acting Convenor of the Group of Specialists presented a report of the Group's activities. Since 1999 the Group has focused on the production of a document on the status of Global Change Research in the Antarctic (the Silver Book); the coordination of GLOCHANT programmes; and the future of the Group. He reported that, for a variety of reasons, the Silver book will not now be produced. The GLOCHANT programmes ANTIME, ITASE and ASPeCt will continue.

### *5.2 Developing WCRP programmes in the Antarctic*

Following the decision of Delegates at XXVI SCAR, C G Rapley and the Executive Secretary had met Dr H Cattle, Chairman of the Scientific Steering Group for the WCRP Climate and Cryosphere (CliC) programme to explore the

possibility for SCAR to be a joint sponsor of the programme. Subsequently, the Joint Scientific Committee of the WCRP had welcomed the proposal for SCAR to provide two members of the CliC Scientific Steering Group whose membership would be 12 in total, with four providing Antarctic expertise. The SCAR representatives would constitute two of the latter. This would require a financial commitment of \$6,000 per annum from SCAR. Delegates approved this arrangement.

In addition, the WCRP Joint Scientific Committee invited SCAR to provide and support a representative on the CliC Data Management and Information Panel, and on the Numerical Experimentation Group or Observation Products Panel. SCAR contributions to the support of workshops, publications and networking would also be welcome. The Delegates did not approve a financial allocation for these purposes.

### 5.3 International relations

Delegates noted that stronger ties are being developed with SCAR and the International Permafrost Association (IPA). They also noted that the existing GLOCHANT programmes had established links with other relevant international programmes and that these would continue.

### 5.4 A strategy for Antarctic Global Change Research

Delegates agreed to establish a Scientific Programme Planning Group (SPPG) on global change research that will be jointly coordinated by all three SSGs within the new SCAR structure. The SPPG will also continue to coordinate SCAR research with other international programmes, such as IGBP and WCRP, as appropriate

## 6. Implementation of the new SCAR structure and organization

### 6.1 General considerations

The President gave a brief account of the history of the internal review of SCAR conducted by the *ad hoc* Group on SCAR Organization and Strategy. He then reviewed the recommendations made by the *ad hoc* Group and listed those that had been implemented, those that are in the process of implementation, and those that have yet to be addressed, particularly the matter of awareness outside SCAR. He reported on the progress made during the previous week by successfully amalgamating the former Working Groups and Groups of Specialists into the new Scientific Standing Committees. He explained that the transition period will extend over the next two years to XXVIII SCAR in Germany by which time all the changes should be in place and operational. However, he pointed out that there was still much to do, particularly with regard to refining terms of reference for, and making appointments to, the Standing Committees. Some of this work would be tasked to the Delegate Committees at this meeting (see Appendix 1).

### 6.2 Secretariat staffing

The *ad hoc* Group on SCAR Organization and Strategy

proposed that: "The new Executive Office should consist of three positions: Executive Director (upgraded from the current Executive Secretary position), Programme Officer (a new position), and Administrative Assistant (an existing position)." At its meeting in Amsterdam during 2001, the SCAR Executive Committee agreed to postpone the employment of the Programme Officer and to initiate the employment procedure for an Executive Director. Subsequently this had also been postponed because the Executive considered that SCAR had insufficient funding to sustain this appointment at the level of the anticipated costs while continuing to provide the existing level of financial support to its scientific groups. Following the discussion of some financial scenarios (see 7.3.3) Delegates agreed that the primary need for SCAR is the employment of an Executive Director and the Executive Committee was asked to pursue this as soon as possible.

### 6.3 Secretariat premises

The Director of the Scott Polar Research Institute, a sub-department of the Department of Geography in the University of Cambridge, England, had agreed to provide additional space for an enlarged Secretariat. This will be made available in two stages. The first stage will be a move later this year from the present Executive Secretary's office to a larger office for the Executive Secretary. The second stage will be the provision of an additional office of similar size for the Executive Director when he/she is appointed. The SCAR Administrative Assistant will continue to occupy the current space in the Institute's General Office.

The President expressed his satisfaction at the provision of the additional space and thanked the Director, Professor J A Dowdeswell, for the Institute's consideration of SCAR's needs. He also reminded Delegates that SCAR is not charged any rent for its office premises and is able to make extensive use of the various facilities available in the Institute.

### 6.4 SCAR Constitution

ICSU had agreed that the SCAR Constitution could be suspended and disregarded where necessary to allow the provisions of the review to be implemented. The President proposed that he would undertake to revise the SCAR Constitution, SCAR Rules of Procedure and Rules of Procedure for SCAR Subsidiary Groups to accommodate the changes. The first draft would be tabled at the meeting of the Executive Committee in July 2003, after which a final draft would be circulated to National Committees for comment so that an approved version could be adopted by Delegates at XXVIII SCAR. The new SCAR Constitution would then be submitted to ICSU for approval by the Executive Board.

## 7. SCAR Functions

### 7.1 Internal

The review of SCAR Working Groups, Groups of Specialists and other subsidiary groups was regarded as

redundant because they had all been overtaken by the restructuring into the new Scientific Standing Groups and their subordinate Action and Expert Groups.

#### 7.1.1 Review of SCAR Working Groups

#### 7.1.2 Review of SCAR Groups of Specialists

#### 7.1.3 Review of other subsidiary groups

#### 7.1.4 Review of National Reports to SCAR

A paper was tabled showing the current status of National Reports to SCAR held by the SCAR Secretariat. It was noted that some reports had not been received, that some National Committees now provided reports in digital format and that some reports were available only on websites. Some Delegates questioned the value of National Reports but it was agreed that they had both a current value and an historical value; the Secretariat was encouraged to ensure that paper copies of all National Reports are made and stored for archival purposes.

The current format of the Reports is based on the disciplinary fields of the former Working Groups. The Secretariat was asked to revise this format to reflect the new structure of Standing Scientific Groups.

There was discussion of the rationalization and unification of the various national reporting requirements under SCAR, COMNAP and the Antarctic Treaty that had been examined by a contact group under the Antarctic Treaty. The Secretariat was asked to survey national and other websites to determine which of these could be linked to the SCAR website to ensure that the required information was available and to reduce the labour of posting individual reports on the SCAR site.

#### 7.1.5 Publications

There was a short discussion on the future requirements for publication in hard copy, particularly as each issue of the *SCAR Bulletin* and the *SCAR Reports* is now routinely posted on the SCAR website. For the same reasons, the need to continue publishing the *SCAR Bulletin* in *Polar Record* was discussed but it was agreed that this should continue and be subject to periodic review as web-based publication becomes more widely used.

#### 7.1.6 Activities of the Executive

A paper was tabled, listing the activities of the Executive Committee since XXVI SCAR, and listing the meetings at which members of the Executive and the Executive Secretary had represented SCAR. Apart from the Executive Committee Meeting held in Amsterdam, The Netherlands, August 2001, SCAR representations included meetings of the Antarctic Treaty; a meeting of ICSU Unions at the ICSU Secretariat, Paris, France, February 2001; the meeting of the SCOR Executive Committee in Mar del Plata, Argentina, October 2001; the GOSEAC XII Meeting in College Station, Texas, USA, April 2002, and two meetings of the International Association of Antarctica Tour Operators.

## 7.2 External

### 7.2.1 Antarctic Treaty System

#### ATCM

The reports of the SCAR observers at XII ATSCM (The Hague, The Netherlands, September 2000) and at XXIV ATCM (St Petersburg, Russia, July 2001) were tabled.

Delegates considered several draft papers for submission to XXV ATCM (Warsaw, Poland, 10–20 September 2002). Most of these papers were approved but, after some discussion and consideration of the likely focus of the agenda at XXV ATCM, it was agreed that a proposed presentation and some papers of a less urgent nature should be held over to XXVI ATCM when the meeting should have more time to consider scientific matters.

The following papers will be submitted:

#### Working Papers

Marine Acoustic Technology and the Environment  
Scoping the Data for a State of the Antarctic Environment Report  
Revision of Annex II  
Specially Protected Species

#### Information Papers

SCAR Report to XXV ATCM  
Marine Acoustic Technology and the Environment:  
Workshop Report  
Exploring Subglacial Antarctic Lakes: A SCAR Report on Progress

#### CCAMLR

A report by the SCAR observer at CCAMLR was tabled and approved by the Delegates. The importance of maintaining close contact with the Antarctic Treaty was emphasized and it was agreed that there should be closer contact with the Scientific Committee of CCAMLR in matters of mutual interest.

### 7.2.2 Other Organizations

#### ICSU

The SCAR Reports to ICSU for 2000 and 2001 were tabled for information.

#### IPY

The year 2007–08 will be the 50th Anniversary of the International Geophysical Year (IGY). This is an important anniversary for SCAR because it was the unprecedented success of the IGY in the Antarctic that prompted ICSU to establish the Special (subsequently Scientific) Committee on Antarctic Research at a meeting (I SCAR) in The Hague, The Netherlands, during February 1958.

H Miller gave a short presentation on a proposed programme to investigate the Ice Divide of Eastern Antarctica (IDEA). This would involve a surface traverse of the ice sheet of Eastern Antarctica over a four-year period (2007–11) making a series of glaciological, geological, geophysical and climatological studies.



Several Delegates suggested other studies that might be included during the traverse that would complement existing and planned research. The programme would be truly international and echo many of the aims of the IGY. There was general support for the proposal and the President suggested that a small group should be established to consider how the plans could be best elaborated and advanced, noting that other ICSU bodies might be interested in taking part. H Miller agreed to lead the group that should present a report to the Executive Committee at its meeting in July 2003.

Delegates supported the proposal that there should be an IPY programme to celebrate the 50<sup>th</sup> anniversary of the IGY and it was suggested that enquiries should be made to ICSU and IUGG. C G Rapley agreed to follow up this proposal.

#### **SCOR, IOC**

The SCOR Executive Committee at its meeting during October 2001 in Argentina. He also reminded the meeting that the President of SCOR, Professor R A Duce, had attended the first week of the SCAR meeting in Shanghai. He noted that the Physical Sciences SSG had established an Action Group on Oceanography and that SCAR is co-sponsoring a symposium session on the Southern Ocean at the IUGG meeting in Sapporo, Japan, during 2003.

C G Rapley gave a brief presentation of a new European initiative in the Southern Ocean. He reported that more than 50 countries and organizations, including several SCAR members that are also members of the European Union, will be involved. He also said that China had expressed interest in taking part through its scientific relationship with the European Union. He forecast that this initiative would be fully international when it finally becomes operational.

#### **Others: GIWA**

The Global International Waters Assessment (GIWA) has approached SCAR to provide an assessment for the Antarctic region, to include the continent and the Southern Ocean. C Howard-Williams agreed to coordinate this activity for the Antarctic and E S E Fanta offered to host a 3-day workshop in Curitiba, Brazil, at which the report will be developed by a small group of invited scientists. Some funding from GIWA is available for the workshop and there will be minimal cost to SCAR.

#### **7.2.3 Bi-polar relations**

SCAR was not formally represented at the IASC Science Summit Week in April 2002. It was noted that some new scientific initiatives may be relevant to Arctic studies and may involve liaison with IASC.

#### **7.3 Financial**

##### **7.3.1 Report of the XXVII SCAR Finance Committee**

The Chairman of the Standing Finance Committee presented the report of the XXVII SCAR Finance Committee. He introduced the Income and Expenditure

statements for 2000 and 2001 and explained the reasons for differences between the projected and actual figures.

##### **7.3.2 Financial statements for 2000 and 2001**

The SCAR Financial Statements for 2000 and 2001 were tabled and approved by the Delegates.

##### **7.3.3 Financial strategy**

The Chairman of the Standing Finance Committee reminded Delegates that at XXVI SCAR it had been suggested that the annual contributions to SCAR might be increased by 10% in 2004 to take account of inflation, there having been no increase since 1996 when the new contribution categories were introduced. Although there were some expressions of approval there was no consensus on this issue and several Delegates said that their National Committees would not agree to any increase. Finally he drew attention to those members who are in arrears with their contributions and urged that these should be settled as soon as possible.

He also presented some financial scenarios by which it would be possible to pay for one or two additional staff in the Secretariat without reducing the level of support for science. There was considerable discussion of the scenarios and Delegates agreed that an Executive Director should be sought and be engaged for a period of up to 5 years. The SCAR balance should be progressively reduced to fund this appointment without jeopardizing the existing level of science support. The Programme Officer post should not be filled at this time but the situation should be kept under review.

##### **7.3.4 Budget for 2002**

The revised budget for 2002 was presented by the Chairman of the Finance Committee and adopted by the Delegates.

##### **7.3.5 Budgets for 2003 and 2004**

The SCAR Budgets for 2003 and 2004 were presented by the Chairman of the Finance Committee and adopted by the Delegates, subject to minor revisions to accommodate some additional allocations approved by the Delegates.

## **8. Future Meetings**

### **8.1 XXVIII SCAR**

#### **8.1.1 Arrangements for XXVIII SCAR**

Professor Dr J Thiede, Delegate from Germany, made a brief presentation of the arrangements being planned for the XXVIII SCAR meeting. This will be held in two parts as proposed in the re-organization of SCAR meetings. A preliminary announcement was distributed at the meeting.

#### **8.1.2 Activities at XXVIII SCAR**

The Scientific Standing Groups will hold their meetings in Bremen, Germany, during the week 25-31 July 2004 around an interdisciplinary science symposium. The Delegates agreed to establish a small group to organize the symposium.

The Delegates Meeting will be held in Bremerhaven, Germany, during the week 3-9 October 2004.

## 8.2 SCAR Executive Meeting

The SCAR Executive Committee will meet in Brest, France, 8-11 July 2003 in conjunction with the COMNAP XV Meeting. The two Executive Committees will hold a joint meeting at this time.

## 8.3 XXIX SCAR (Hobart, Australia)

Dr I Allison, Delegate of Australia, confirmed the kind offer of the Australian National Committee to host the XXIX SCAR meeting in Hobart, Tasmania, during 2006.

The Secretariat had also received expressions of interest from Finland, Russia and Uruguay to host future SCAR meetings.

## 9. Closure of the meeting

A draft Final Report of the XXVII SCAR Delegates Meeting was adopted by Delegates on the last day of the meeting, on the understanding that the final draft with some additional material would be circulated to Delegates and National Committees for approval prior to publication.

## Appendix 1

### Reports of the Delegate Committees

The following two reports summarize the major discussions held by the two Delegate Committees during XXVII SCAR. The detailed points that emerged in relation to the implementation of the SCAR review, and the structure and organization of the SSGs and their subsidiary Action and Expert Groups, have been amalgamated into the text of a revised version of the implementation document. This document will be distributed separately and its provisions are expected to form the basis of the revised "SCAR Rules of Procedure" and "Rules of Procedure for SCAR Subsidiary Groups" that will be appended to the revised "SCAR Constitution".

#### Report of the Delegate Committee on Scientific Affairs

The meeting of the Committee was chaired by C G Rapley.

The Committee focused its discussions on the various tasks that needed to be done during the next two years to ensure the completion of the implementation process at the SCAR Science Meeting of XXVIII SCAR in Bremen, Germany, 25-31 July 2004.

The following principal tasks were identified:

1. To provide Chief Officers of the SSGs with the format for the reports of their activities in the previous 2 years that will be produced in Bremen. Draft guidelines should be prepared for review by the Executive Committee at its meeting in 2003.
2. The need to establish a Programme Committee for the Bremen Science Meeting, particularly for the Symposium. Membership of the Committee should include representatives of the SSGs, SCAR Executive, Secretariat, Local Organizing Committee, and be chaired by the President of SCAR.
3. Deadlines for various activities, particularly the submission of SSG reports, should be established in relation to the agreed dates for the Science Meeting and Delegate Meeting for XXVIII SCAR.

The Chief Officers present at the Committee Meeting summarized various issues on which they sought guidance.

The Committee recommended that the informal group that had proposed the new programme on Antarctic Climate Evolution (ACE) should be formally constituted as a Scientific Programme Planning Group (SPPG). The SPPG should develop the proposed programme in close consultation with the SSGs and present a formal proposal to the SCAR Executive Committee at its meeting in Brest, France, during July 2003.

#### Report of the Delegate Committee on Standing Committees

The meeting of the Committee was chaired by R H Rutford.

The Delegate Committee considered the three Standing Committees that had been proposed following the review of SCAR. The Terms of Reference, etc, that were described in the document on implementing the SCAR Review, were discussed.

It was agreed that the descriptions for the Standing Committee on Finance did not need extensive modification but some minor changes were suggested concerning membership.

There was discussion concerning the Standing Committee on Data. It was agreed that this Standing Committee would not be necessary at the present time and that SCAR's needs for advice on data matters could best be served by the existing SCAR-COMNAP Joint Committee on Antarctic Data Management (JCADM). It was proposed that the SCAR Executive should review the SCAR membership of JCADM and make recommendations on data management to the Delegates Meeting at XXVIII SCAR.

The Terms of Reference for the Standing Committee for the Antarctic Treaty System were discussed at length and a number of changes were proposed.

There was some discussion about the formation of an "outreach" committee, as was indicated in the review document. It was generally agreed that the term "outreach" had different meanings for members of the Committee but there was also a general understanding that the term implied increasing the "awareness" and "visibility" of SCAR, both in the wider science community and to the public at large.

## XXVII SCAR Recommendations

### Recommendation SCAR XXVII-1

#### *Concerning Antarctic place-names*

*Noting* that the SCAR Composite Gazetteer of Antarctica (CGA):

- was published in March 1998 by the SCAR Working Group on Geodesy and Geographic Information;
- contains names data from twenty-two SCAR member countries and the International Hydrographic Organization (IHO) / Intergovernmental Oceanographic Commission (IOC);
- comprises around 34,165 entries for 17,097 features, with about 10% of features having two or more entirely different names;

*Noting also* that, with the increasing importance being placed on names for operational and research purposes, there is a requirement for greater accuracy of the coordinates;

*Considering* that, in the interests of both scientific clarity and operational safety, the general principle of 'one name per feature' should apply for all new feature names;

SCAR *recommends* that National Committees, directly or through their national Antarctic naming authority:

1. refer to the SCAR Composite Gazetteer of Antarctica when considering all proposals for new place names;
2. avoid applying new place-names to features already named;
3. submit all new approved place-names to the SCAR Expert Group on Geospatial Information for inclusion in the SCAR Composite Gazetteer of Antarctica;
4. provide existing place-name data to the SCAR Expert Group on Geospatial Information for inclusion in the SCAR Composite Gazetteer of Antarctica.

### Recommendation SCAR XXVII-2

#### *Concerning bathymetric data*

*Noting* that the lack of bathymetric information in large areas of the Southern Ocean is a limiting factor in bathymetric mapping and nautical charting;

*Noting* the initiative from the International Hydrographic Organization for an improved International Bathymetric Chart for the Southern Ocean;

*Noting further* the key role of the International Hydrographic Organization Data Center on Digital Bathymetry located at the US National Geophysical Data Center in Boulder, Colorado, and the efforts of the Intergovernmental Oceanographic Commission /

International Hydrographic Organization for updating and maintaining the General Bathymetric Chart of the Ocean;

*Considering* the need for bathymetric maps for the morphological interpretation of the sea-floor structure and general oceanographic studies, the geo-location of scientific data, and the general requirements for precise nautical charts to ensure the safety of navigation in Antarctic waters;

SCAR *recommends* to National Programmes that:

1. they support the acquisition of echo-sounding data on all vessels operating in Antarctic waters and the delivery of those data to the International Hydrographic Organization Data Center on Digital Bathymetry for further use in bathymetric mapping;
2. wherever possible, vessel transits should be planned through oceanic regions where few bathymetric data exist in order to gather additional bathymetric information.

### Recommendation SCAR XXVII-3

#### *Concerning geodetic and geographic information*

*Noting* the Antarctic Treaty Article III (1c) requirements regarding data exchange,

*Recognizing* that the information products produced by the SCAR Geoscience Standing Scientific Group are all derived from the work of National Committees and Programmes:

SCAR *recommends* that National Committees request National Programmes to provide continuing access for all SCAR members to fundamental geodetic and geographic information, including:

- geodetic observations and databases;
- geodetic control point and tide gauge records;
- remotely sensed data (including satellite imagery and aerial photography);
- topographic and bathymetric data; and
- place names data.

### Recommendation SCAR XXVII-4

#### *Concerning airborne gravity data for geoid computation*

*Noting* that determination of a high resolution geoid in Antarctica benefits research of the ice density of the Antarctic ice sheet, determination of surface elevation relative to mean sea level, and the calibration and validation of satellite missions;

*Recognizing* that there is a major gap in gravity data required for the computation of a high resolution geoid in Antarctica;

Considering the current lack of gravity data; the need to acquire gravity data at close intervals (optimally spaced between 10 and 50 km); that new satellite gravity missions will leave a gap at 82–90°S; and that airborne gravity observation is considered the most cost effective and reliable method for collecting data;

SCAR *recommends* that National Committees request National Programmes:

- to support a scientific programme of airborne gravity to cover gaps in Antarctica gravity data; and
- to encourage all researchers to coordinate their efforts in Antarctic gravity data acquisition, in particular airborne gravity data, and to provide such data to the SCAR Geoscience Standing Scientific Group for incorporation into a physical geodetic database of Antarctica.

### **Recommendation SCAR XXVII-5**

*Concerning geodetic observations at remote locations*

*Recognizing* the technological advances being made in low power operation, data storage capacity and data communication at remote Antarctic sites

SCAR *recommends* that National Committees, where possible, place long-term Global Positioning System observatories on remote bedrock features (as identified by the SCAR Neotectonics Scientific Programme Group – see [http://www.scar-ggi.org.au/geodesy/antec/proposed\\_gps.htm](http://www.scar-ggi.org.au/geodesy/antec/proposed_gps.htm)) to provide information on the current tectonic motion of the Antarctic plate.

### **Recommendation SCAR XXVII-6**

*Concerning rationalization of scientific activities on King George Island*

*Aware* of the on-going debate on scientific activities that is currently underway on King George Island;

*Appreciating* that national programmes should maintain their own priorities; and

*Noting* the belief of the Working Group on Physics and Chemistry of the Atmosphere that some rationalization of existing research programmes on King George Island would free resources for new scientific projects;

SCAR *recommends* that the relevant National Committees should make efforts to integrate their scientific objectives and to collaborate with other nations.

### **Recommendation SCAR XXVII-7**

*Concerning the King George Island Geographic Information System (GIS)*

*Noting* SCAR Recommendation XXVI-6 concerning rationalization of scientific activities on King George Island;

*Recognising* that a Geographic Information System for the whole island has been produced and is now available on the internet;

SCAR *recommends* that

1. countries with programme activities on King George Island should make use of this integrated system for science activity, environmental planning and logistic operations; and
2. National Committees, through their National Programmes, should continue providing spatially referenced data to the Geographic Information System for the mutual benefit of all National Programmes with activities on the island.

### **Recommendation SCAR XXVII-8**

*Concerning biological prospecting*

*Recognizing* that the Antarctic marine ecosystem has a high biodiversity and is rich in groups of interacting organisms which elsewhere in the world have proved of pharmaceutical value;

*Noting* the increasing international interest in the worldwide exploitation of biodiversity for chemical compounds of use to mankind; and

*Recognizing* that the international legislation for controlling access to genetic resources is based on sovereign rights which do not appear to be applicable in the Antarctic Treaty area south of latitude 60°S,

SCAR *recommends* that National Committees be aware of:

- the possible detrimental direct and indirect effects of any direct collection of Antarctic species for the identification and commercial exploitation of secondary metabolites, enzymes or other useful molecules
- the possibility of patenting of gene sequences from Antarctic organisms for commercial use
- the lack of any legislation under the Antarctic Treaty System specifically focused on these matters.

### **Recommendation SCAR XXVII-9**

*Concerning the Agreement for the Conservation of Albatrosses and Petrels (ACAP)*

*Recollecting* Recommendation XXVI-Biol 8, covering threats to Southern Ocean seabirds due to mortality in longline fisheries, and

*Noting* existing and new international initiatives to address these problems,

SCAR *recommends* that National Committees, in those countries which are range states for Southern Hemisphere albatrosses and petrels, encourage their governments to sign and ratify the Agreement for the Conservation of Albatrosses and Petrels (ACAP) as soon as possible, so that the Agreement may come into force without undue delay.

### **Recommendation SCAR XXVII-10**

*Concerning the use of flipper bands on penguins*

*Noting* the increased scientific evidence for negative impacts of flipper bands to penguins;

*Recognizing* that banding studies are still underway within some national programmes;

SCAR *recommends* that National Committees to exercise caution when designing research programmes that require the external marking of penguins, in particular the use of flipper bands, and to implement alternative methods of marking penguins wherever possible.

#### **Recommendation SCAR XXVII-11**

##### *Concerning drifting buoys*

*Recognizing* the importance of air pressure and temperature data from the sea ice zone to global weather prediction models and climate research;

SCAR *urges* National Committees to support the International Programme for Antarctic Buoys (IPAB).

#### **Recommendation SCAR XXVII-12**

##### *Concerning meteorological reports from Dome C*

*Recognizing* the importance of surface and upper air meteorological observations over the plateau of East Antarctica for numerical weather prediction;

*Noting* the loss of upper air data from Vostok Station and the fact that South Pole Station is the only source of such data from the interior of the continent;

SCAR *recommends* that the Italian and French National Committees urge their National Programmes to institute 6 hourly surface and 12 hourly upper air observing programmes. This is particularly important in the light of.

#### **Recommendation SCAR XXVII-13**

##### *Concerning Antarctic weather data monitoring*

*Noting* that there is a need to maintain the quality of Antarctic weather data, to archive the data in a consolidated climate database and make them readily accessible to researchers of all nations;

SCAR *endorses* the monitoring of Antarctic data received in real time at several hubs of the Global Telecommunications System organized by the World Meteorological Organization and

*requests* the World Meteorological Organization's Working Group on Antarctic Meteorology to ensure that the availability of the observations via data centres is continued.

#### **Recommendation SCAR XXVII-14**

##### *Concerning ice core storage and curation*

*Recognizing* the considerable effort by many nations to obtain ice cores for the purpose of reconstructing the climatic history of the Earth and assessing the current climate of the Antarctic; and

*Noting* the critical importance of safekeeping and appropriate curation of these core collections;

*Aware* of the InterICE initiative to bring together ice-core curation facility managers, operators, scientists, and logistics experts for the purpose of exchanging information on successful strategies for accession, safeguarded storage, processing and allocation of ice-core samples;

SCAR *recommends* that National Committees, in those countries that support existing ice-core storage facilities or are planning to construct such facilities in the future, should encourage their National Programmes to participate in InterICE.

#### **Recommendation SCAR XXVII-15**

##### *Concerning meteorological data from Automatic Geophysical Observatories (AGOs)*

*Recognizing* that:

- the British and American Antarctic Programmes operate Automatic Geophysical Observatories (AGOs);
- AGOs collect data for studies on solar-terrestrial physics and meteorological variables;
- the British data are collected annually and are available at BAS;
- meteorological data and other information from the US AGOs are placed on the World Wide Web and are refreshed every 24 hours.
- meteorological data are required on the Global Telecommunications System (GTS) operated by the World Meteorological Organization (WMO) at least at 00 GMT and 12 GMT, so that they can be assimilated into operational global models run by a number of centres around the world;

SCAR *recommends* to National Committees that meteorological data from AGOs should be inserted into the WMO GTS at least twice every 24 hours (at 00 GMT and 12 GMT).

#### **Recommendation SCAR XXVII-16**

##### *Concerning the importance of magnetometer data*

*Recognizing* the importance of high precision absolute measurements of the geomagnetic field for:

1. Improving understanding of the structure and evolution of the Earth's interior;
2. Assisting the determination of the International Geomagnetic Reference Field that is a crucial background data set for global solar-terrestrial and other studies;
3. Providing ground truth for present and up-coming satellite missions;

*Noting* increasing satellite and ground-based international efforts related to the current solar maximum;

SCAR *encourages* National Committees and other responsible bodies to establish and maintain these important basic measurements at all feasible Antarctic stations that provide independent coverage.

**Recommendation SCAR XXVII-17***Concerning continued support of existing observatories*

*Recognizing* that the study of Geospace and the Space Weather Environment is now more important than ever, both scientifically and in terms of the practical impact of Space Weather on technological systems in space and on the ground; and

*Recognizing* that the polar regions, and especially Antarctica, provide unique platforms for coordinated multipoint observations of the geospace environment

*Noting* that the ionosphere over the Antarctic continent is now comprehensively monitored by overlapping fields of view of multiple HF radars and

*Noting* the crucial importance of ground-based observatories at distributed high latitude Antarctic sites as facilitated, for example, by the Automatic Geophysical Observatories (AGOs) operated by the United Kingdom and United States;

SCAR *recommends* to National Programmes that these and other similar observations be continued without interruption during the next few years as geophysical activity peaks during and after the current intense solar maximum.

**Recommendation SCAR XXVII-18***Concerning site testing for astronomical observation.*

*Recognizing* the advantage to astronomy of the unique observing conditions on the Antarctic plateau, confirmed by the exceptional conditions existing at South Pole station; and

*Noting* that comprehensive data on the site conditions are an essential pre-requisite to the establishment of new observatories;

SCAR *encourages* responsible organizations and National

Programmes to deploy instrumentation to potential new sites to acquire comprehensive data on observing conditions.

**Recommendation SCAR XXVII-19***Concerning metadata records*

*Recognizing* that the generation of metadata records are key components of national science programmes;

*Recognizing* also that the creation of metadata records requires an appropriate level of resourcing for science projects as well as National Antarctic Data Centres (NADCs);

SCAR *recommends* that National Committees urge National Programmes to ensure:

1. that metadata records are created as soon as is feasible after the collection of data; and
2. that appropriate funding is made available to science projects for such records to be created as an integral part of the project.

**Recommendation SCAR XXVII-20***Concerning drilling above Lake Vostok*

*Being aware* that the proposal to drill a further 50 m in the existing borehole at Vostok Station, to extract additional accretion ice as a proxy for sampling the lake water, has significant scientific value;

*Noting* that there is uncertainty about possible lake contamination during further drilling;

*Noting also* that the intention of all interested parties is to ensure proper stewardship of subglacial lake environments;

SCAR *recommends* that additional studies should be carried out before further drilling towards Lake Vostok is undertaken in the existing hole.

**Appendix 3**

## Joint SCAR/COMNAP Executive Committee Meeting Shanghai, China, 16 and 18 July 2002

**Report of the Meeting***Present:*

SCAR: R H Rutford, A C Rocha-Campos, J Valencia, A D M Walker, R Schlich, C G Rapley, P D Clarkson.

COMNAP: K A Erb, G Jugie, G S Wratt, K Pitt, O Watanabe, J C A Sayers.

**1. Opening remarks**

R H Rutford took the Chair for the meeting. The draft agenda was adopted with the addition of three items under any other business

**2. Antarctic Data**

The Chief Officer of the Joint (SCAR-COMNAP) Committee on Antarctic Data Management (JCADM), M R Thorley, presented a progress report on the development of the Antarctic Master Directory (AMD) being undertaken on behalf of SCAR and COMNAP by the Global Change Master Directory (GCMD). The number of metadata records had increased from 1380 in May 2001 to 2476 in July 2002; the number of "hits" had increased from 640 in the first quarter of 2001 to 1900 in the first quarter of 2002.

He emphasized the value of the AMD for scientists to identify data sources outside their own field of expertise when embarking on interdisciplinary research. He also stated that the AMD contained metadata on logistical matters that would be of value to managers of Antarctic programmes.

M R Thorley proposed a new structure for JCADM with a Chief Officer, Deputy Chief Officer and Secretary (in accordance with the proposed structure for a new SCAR Standing Committee) with a membership of representatives from the National Antarctic Data Centres (NADCs). Interaction with SCAR would be provided by a JCADM representative to each of the new Scientific Standing Groups (SSGs), (T de Bruin for Geosciences; L Belbin for Life Sciences; D Peterson for Physical Sciences) with reciprocal participation in JCADM by representatives of the SSGs. Interaction with COMNAP would be provided by regular reporting to COMNAP and by support to operational projects.

Funding to the GCMD for the development contract had been set at \$20,000 per annum each from SCAR and COMNAP for the years 2001 and 2002. M R Thorley proposed that future funding should be set at a total of \$20,000 per annum from 2003 for the GCMD to support data entry and quality control and to provide maintenance services for portals and tools.

K Jezek, Chairman of the Steering Committee for the Antarctic Master Directory (STADM), provided a written report that recommended full payment under the terms of the 2-year contract for the work achieved in 2001 and 2002.

The meeting agreed that the GCMD should be asked to continue its work on the AMD to complete the initial 2-year period as proposed, and that STADM should continue to monitor and report on progress. It was also agreed to defer a decision on additional funding until after the SCAR Delegates had considered the proposed SCAR budget allocations for 2003 and 2004. It was noted that neither SCAR nor COMNAP could commit funding allocations for more than 2 years in advance. It was also noted that STADM would have no funding requirement because the committee worked entirely by mail.

The Chairman thanked JCADM and STADM for their very helpful reports. He also thanked M R Thorley for the work he had done on data issues for both SCAR and COMNAP over the past 10 years and wished him success in the future as he departed from the Antarctic community.

### 3. SCAR-COMNAP Discussion Forum

The Chairman described the proposed programme of presentations to be made at the SCAR-COMNAP Discussion Forum on Saturday 20 July 2002.

Antarctic Subglacial Lakes		
J C Priscu and others	90 minutes	
Antarctic Neotectonics		
T J Wilson and others	30 minutes	
Cybercartographic Atlas		
D R F Taylor	30 minutes	

Southern Ocean

C G Rapley

30 minutes

Questions and discussion will be included in the above times.

### 4. Poster sessions

K A Erb drew the attention of the meeting to the National Programme posters on display during the COMNAP meeting.

The Chairman informed the meeting that some 50 posters illustrating the work of the Group of Specialists on Antarctic Neotectonics (ANTEC) would be displayed on 16 July 2002.

### 5. Symposia

K Pitt reminded the meeting that the Standing Committee on Antarctic Logistics and Operations (SCALOP) Symposium on would begin at 1300 on 16 July 2002. There would be four sessions of oral presentations interspersed with poster sessions to allow further discussion.

The Chairman stated that the SCAR Symposium on "The Antarctic sea ice zone: physical and biological processes and interactions" would be held on 17 July 2002.

J Valencia reported that provisional offers to host the next SCAR Biology Symposium in 2005 had been received from Japan and Brazil.

### 6. ATCM matters

The Chairman confirmed the dates of XXV ATCM, Warsaw, Poland, as 10–20 September 2002 and XXVI ATCM, Madrid, Spain, as 9–20 June 2003. K A Erb reported a suggestion that, when the Antarctic Treaty Secretariat becomes operational, future ATCMs may be held in Buenos Aires, Argentina. G S Wratt reported that there was support for the ATCM to return to a biennial cycle but that the CEP would need to meet annually with an ATSCM to adopt the report in non-ATCM years.

K A Erb said that COMNAP would be responding to a request for a paper on waste water disposal on inland areas of ice-free ground in Antarctica. He noted that the question of whether waste-water treatment plants produced effluent that could be discharged in such areas might require SCAR input.

J Valencia outlined the history of the SCAR scoping paper on the "State of the Antarctic Environment Report" (SAER) and said that the SCAR Working Group on Biology considered that the report should be linked to the Antarctic Master Directory (AMD). K A Erb noted that the national operators would be at least partly responsible for implementing any SAER and thus COMNAP might wish to comment on the process.

### 7. Future meetings

G Jugie confirmed that the COMNAP XV meeting would be held in Brest, France, 7–11 July 2003, when the SCAR Executive Committee would also meet.

The Chairman confirmed that the science week of XXVIII SCAR would be held in Bremen, Germany, 25–31 July 2004 and K A Erb confirmed that COMNAP XVI would be held in parallel.

## 8. Any Other Business

*Medical screening:* K A Erb reported that national operators currently accepted certificates of medical fitness for scientists from other national programmes and that COMNAP is conducting a survey to determine the comparability of such screening certificates.

*Weather forecasting:* C G Rapley reported that the SCAR Working Group on Physics and Chemistry of the Atmosphere (PACA) is considering forming a subgroup on operational weather forecasting. He suggested that there would be value in a liaison with COMNAP on the scope of this work.

*Next meeting:* In closing the meeting the Chairman asked the Executive Secretaries to schedule the next joint meeting of the Executive Committees during the COMNAP XV meeting in Brest during 2003.

## Appendix 4

### List of Acronyms and Abbreviations

AAA	Antarctic Astronomy and Astrophysics	GLOCHANT	Group of Specialists on Global Change and the Antarctic
ACE	Antarctic Climate Evolution		
AEON	Antarctic Environmental Officers Network	GOSEAC	Group of Specialists on Environmental Affairs and Conservation
AGEANT	Age, Growth and Evolution of Antarctica	IASC	International Arctic Science Committee
AGU	American Geophysical Union	ICESTAR	Interhemispheric Conjugacy in Environmental, Solar-Terrestrial and Atmospheric Research
AMD	Antarctic Master Directory		
ANTEC	Antarctic Neotectonics	ICSU	International Council for Science
ANTIME	Late Quaternary Antarctic Sedimentary Record of Ice Margin Evolution	IDEA	Ice Divide of Eastern Antarctica
APIS	Antarctic Pack Ice Seals programme	IEE	Initial Environmental Evaluation
APTIC	Antarctic Peninsula Tropospheric-Ionospheric Coupling	IGBP	International Geosphere–Biosphere Programme
ASPeCt	Antarctic Sea-Ice Processes and Climate	IGU	International Geographical Union
ATAC	Antarctic Tropospheric Aerosols and Their Role in Climate	IGY	International Geophysical Year
		IOC	Intergovernmental Oceanographic Commission
ATCM	Antarctic Treaty Consultative Meeting	IPA	International Permafrost Association
ATSCM	Antarctic Treaty Special Consultative Meeting	IPY	International Polar Year
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources	ISMAS	Ice Sheet Mass Balance and Sea Level
CCAS	Convention for the Conservation of Antarctic Seals	ITASE	International Trans-Antarctic Scientific Expedition
CEP	Committee for Environmental Protection	IUBS	International Union of Biological Sciences
ClIC	Climate and Cryosphere	IUGG	International Union of Geodesy and Geophysics
COMNAP	Council of Managers of National Antarctic Programmes	IUGS	International Union of Geological Sciences
EASIZ	Ecology of the Antarctic Sea-Ice Zone	IUPS	International Union of Physiological Sciences
EGS	European Geophysical Society	JCADM	SCAR-COMNAP Joint Committee on Antarctic Data Management
EPB	European Polar Board	MADREP	Middle Atmosphere Dynamics and Relativistic Electron Precipitation
EPICA	European Polar Ice Coring in Antarctica	NADC	National Antarctic Data Centre
EVOLANTA	Evolutionary Biology of Antarctic Organisms	PACA	Physics and Chemistry of the Atmosphere
FCO	Foreign and Commonwealth Office (United Kingdom)	PAG	Permafrost Action Group
FRISP	Filchner–Ronne Ice Shelf Project	PASTA	Plateau Astronomy Site Testing in Antarctica
GCMD	Global Change Master Directory	PICE	Palaeoenvironments from Ice Cores
GIANT	Geodetic Infrastructure for Antarctica	READER	Reference Antarctic Data for Environmental Research project
GIP	Geographic Information Programme		
GIWA	Global International Waters Assessment		
GLASS	Glaciology of the South Shetland Islands		



RiSCC	Regional Sensitivity to Climate Change in Antarctic Terrestrial and Limnetic Ecosystems	SSG	Scientific Standing Group
SAER	State of the Antarctic Environment Report	STADM	Steering Committee for Antarctic Data Management
SALE	Subglacial Antarctic Lake Exploration	STEPS	Solar-Terrestrial Processes and Space Weather
SCALOP	Standing Committee on Antarctic Logistics and Operations	TRAINET	Education and Training Network
SCAR	Scientific Committee on Antarctic Research	VELMAP	Velocity Map
SCOR	Scientific Committee on Oceanic Research	WAIS	West Antarctic Ice Sheet
SPPG	Scientific Programme Planning Group	WCRP	World Climate Research Programme
		WMO	World Meteorological Organization

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**Erratum**

SCAR Bulletin no 148, January 2003.

On the outside back cover of this issue it should state: "This material appeared also in *Polar Record* 39 (208) 85–96 (2003)."



## ***SCAR Bulletin***

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## ***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.

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