

Chapter 6

The Rejuvenation Years (1998–2003)

SCAR Organization and Strategy

The early meetings of SCAR were once described as “a group of a dozen Delegates and their advisors sitting around a table in a fog of pipe smoke!” This was not far from the truth and it could be added that all of those present had been involved in IGY operations in the Antarctic and brought to the table a wealth of experience. They knew what research had been done, what research was still needed and they knew the practicalities of implementing programmes in the Antarctic. The description of SCAR as “an old explorers’ club” was probably justified. Gradually the IGY men disappeared to be replaced by younger versions of themselves. However, as time went on, some Delegates who came to meetings had little, or even no, Antarctic experience. New members joined SCAR whose scientists were keen to extend their scientific horizons and be a part of the unveiling of Antarctica’s secrets.

SCAR had thus been growing in size and complexity but it had not really grasped the importance of internal change in maintaining its key role as an international co-ordinator for all Antarctic science. The growth of Antarctic interests and activity in other NGOs was beginning to challenge its leadership but its structures were still much the same as in 1970. During the 1990s it became increasingly apparent that some things would have to change if SCAR was to continue to fulfill its functions and be effective in initiating, promoting and co-ordinating Antarctic

research. In 1989 the former Working Group on Logistics had been closed and replaced by the Council of Managers of National Antarctic Programmes (COMNAP), a separate organization that was “federated to SCAR”, although SCAR seemed uncertain as to what “federated” really meant. SCAR had, of course, evolved over the years but major changes were overdue. Various suggestions for improvements had been rejected because “that was not how things were done”. Those Delegates surviving from the early years were steeped in tradition and were resistant to change; there was tremendous inertia in SCAR that needed to be overcome.

The Birth of a New Future in Concepción

What turned out to be the crucial XXV SCAR meeting in Concepción, Chile, in July 1998, had a difficult start because an astonishing number of participants arrived without any luggage. During a meeting of the Executive Committee, the Executive Secretary suggested that progress in the Delegates’ Meeting might be accelerated if two Delegate Committees could be formed. For example, the administrative items of the agenda might be discussed by one Committee and the scientific items be discussed by the other while meeting in parallel sessions. Most delegations were represented by a Delegate and an Alternate Delegate who could sit in the different Committees. Then, at a Plenary session, the discussions could be reported and any further discussion held if necessary. Provided no item was

Chapter 6. The Rejuvenation Years (1998–2003)

A selection of photographs from XXV SCAR in Concepción, Chile, July 1998.



Above left: the XXV SCAR and X COMNAP logo.

Above right: the venue at the Mathematical Faculty, University of Concepción.

Below left: José Valencia and Tony Rocha-Campos in conversation.

Below right: Carlos Rinaldi and Luis Fontana (Argentina) and Pat Quilty (Australia) during the Delegates' Meeting.

Bottom left: Carlos Rinaldi with a young partner demonstrating his prowess on the dance floor.

Bottom right: Roland Schlich, Chairman of the SCAR Standing Finance Committee, enjoying a “eu-reka” moment while preparing the budget!



discussed again from scratch in the Plenary session, this should save a considerable amount of time. This idea was floated simply for discussion by the Executive Committee, who could propose the idea to the Delegates if they wished. If the Delegates approved the idea it could be adopted for use at a future meeting.

The Executive agreed that this seemed to be a good idea but when the Chilean hosts were told about this consternation reigned as they were totally unprepared for such a move and did not have the necessary rooms available. However, they agreed that if the Delegates did approve the idea at the beginning of the meeting then the Chileans would do their best to meet the requirements. The Delegates assembled in what was a less than ideal room, sitting down a very long narrow table that was anything but conducive to discussion and meant that the President had great trouble seeing who wished to speak. The proposal was put to the Delegates at the beginning of the meeting when it was given a mixed reception. Some did not like the idea, others were in favour. It was, however, agreed that this would be worth trying in future and that the Japanese hosts of XXVI SCAR should be asked to make suitable arrangements.

It is interesting to note that this was subsequently recommended by the *ad hoc* Committee on SCAR Organization and Structure and that two Delegate Committees were formed for the first time at the XXVI SCAR Meeting in Tokyo, Japan.

At the meeting there were some dynamic new Delegates around the table who were frustrated by the ponderous nature of the meeting. For some of these, the protracted process of electing a new President and two new Vice Presidents was the final straw. Chris Rapley, the newly appointed Director of BAS and UK Delegate, decided that the ethos was insufficiently dynamic for an important ICSU body. His challenge was to reform and update or be increasingly seen as irrelevant. And to add some determination

to the message he announced that unless SCAR was willing to do this the UK would leave the organization. Jörn Thiede, the German Delegate and new Director of AWI, then came forward to fully support the UK's proposal and he also threatened that Germany would leave if SCAR did not change. This bombshell energized the Delegates and by the end of the meeting terms of reference had been drafted for an *ad hoc* group under an independent chairman for an internal review of SCAR. The new President, Bob Rutford (United States), with the Executive Committee, was tasked with appointing the members of the Committee and finding a suitable chairman. In due course the members were appointed to represent the principal constituencies within SCAR and the *ad hoc* Committee on SCAR Organization and Strategy (SOS) was formed. The acronym seemed rather appropriate! The choice of chairman was difficult but eventually Philip M Smith was persuaded to do it. Phil Smith had undertaken glaciological research on the Ross Ice Shelf in the late 1950s and had spent most of his life working as a staff member of the United States National Science Foundation and the National Academy of Sciences. Thus, with Antarctic field experience and a wealth of experience in scientific administration, he was ideally qualified to undertake the task. He was assisted by Michael McGeary, an independent consultant to various government and other agencies in the United States.

The Group began by developing a "Call for Comments on SCAR" to solicit views on SCAR's strengths and ways that its operations might be improved. This consultation document was circulated to all National Committees, Union Members of SCAR, Past Presidents of SCAR, and the Chief Officers of all the SCAR Working Groups and Groups of Specialists. The responses were collated and circulated to the members of the group. Following this, the first meeting of the *ad hoc* group was held in Cambridge, United Kingdom, in August 1999. Further work was done inter-sessionally by electronic

SCAR *ad hoc* Committee on SCAR Organization and Strategy

Chairman: P M Smith Staff Director: M McGeary

Members:

J M Acero, Instituto Antártico Argentino, Argentina

K Birkenmajer, Polish Academy of Sciences, Poland

A S Blix, University of Tromsø, Norway

A L Clarke, Department of Industry, Science and Resources, Australia

F J Davey, Institute of Geological and Nuclear Sciences Ltd, New Zealand

Z Dong, Polar Research Institute of China, China

A Karlqvist, Swedish Polar Research Secretariat, Sweden

D G M Miller, Department of Environmental Affairs and Tourism, South Africa

C G Rapley, British Antarctic Survey, United Kingdom

mail and a second and final meeting was held in Buenos Aires, Argentina, in January 2000. An extensive final report was prepared and submitted to the SCAR Executive Committee that, in turn, circulated it to National Committees and it was tabled for discussion at the XXVI SCAR Delegates' Meeting in Tokyo, Japan, July 2000.

Following the insurrection at XXV SCAR much attention at a national level was focused on the review of SCAR and providing input to the *ad hoc* group. Nevertheless, the routine SCAR activities in the Secretariat, the Working Groups and Groups of Specialists continued, as did the preparation of SCAR advice to the Antarctic Treaty.

The SCAR Executive Committee met in Goa, India, 20–24 September 1999, in conjunction with the Eleventh meeting of the Council of Managers of National Antarctic Programmes (COMNAP XI). The SCAR and COMNAP Executive Committees held a joint meeting during the week.

The Executive Committee noted that the Programme Co-ordinator for the GLOCHANT Programme had resigned, which prompted discussion on whether or not a replacement would be needed as most

of the constituent programmes were now mature programmes that would probably not need support from the Project Office. The Executive Committee welcomed the work done by GOSEAC on the State of the Antarctic Environment Report (SAER) as requested by XXIII ATCM. It also noted the valuable work done by GOSEAC on a number of other issues that related to requests for advice from the ATCM. These comments were particularly welcome to the Convenor and members of GOSEAC who had, for years, been criticized for the “free-wheeling” style of the group in pronouncing on matters outside their remit.

A particularly difficult problem for the Executive at this meeting was to choose a new design for a SCAR tie as the stock of the original SCAR ties was exhausted. The Executive Secretary tabled several examples ranging from rather modern designs to the traditional design of a club tie. Opinions were evenly split and Roland Schlich proposed that his wife Michelle should be invited to choose and break the deadlock. She duly chose a modern design. After she had left the room the President exercised his authority and financial acumen and instructed the Executive Secretary to order a stock of the traditional club design “... because we'll sell more”! However, the Executive

did agree to order a supply of SCAR lapel pins and tie clips but nothing for female scientists!

In discussing preparations for XXVI SCAR in Tokyo, Japan, 2000, the Executive agreed that the Delegates would form three Delegate Committees, each led by two members of the Executive, as was proposed at XXV SCAR, to consider major items, such as the Review of SCAR. In the event, only two Delegate Committees were formed. This would be a new format for the Delegates' Meeting that would eventually become a standard by the adoption of the recommendations in the Review.

Interest in subglacial lakes in Antarctica had been growing since the confirmation that Vostok Station was situated above the southern end of a subglacial lake similar in size to Lake Ontario on the Canada–United States border. An international workshop held in Cambridge, UK, in September 1999 recommended that SCAR should establish a Group of Specialists to develop a research plan with representation of all the relevant scientific disciplines. Biological research would be a prime focus and it was suggested that Yvon LeMaho, as Chairman of the Working Group on Biology, should be a member of the group. LeMaho responded by saying that he was a penguin biologist and that it would be more appropriate for the Working Group to be represented by a microbiologist. After all, he said “We do not expect to find a Loch Ness penguin in the lake!” The Group of Specialists on Subglacial Antarctic Lake Exploration was established at XXVI SCAR under the joint convenorship of Heinz Miller and John Prisco.

XXVI SCAR, Tokyo, Japan

At XXVI SCAR in Tokyo, Japan, July 2000, Dr R H Rutherford, President of SCAR, opened the meeting and expressed his great pleasure that Their Imperial Highnesses, Prince and Princess Takamado, had consented to honour the meeting by their presence, in spite of their mourn-



The new SCAR tie (above) and the SCAR lapel pin and tie clip (below).

ing for Her Imperial Majesty, the Empress Dowager. He then invited His Imperial Highness Prince Takamado to address the meeting. After replying to His Imperial Highness, Dr Rutford invited Mr Tsuneo Suzuki, Senior State Secretary, Ministry of Education, Science, Sport and Culture, and Dr Hiroyuki Yoshikawa, President of the Science Council of Japan and President of the International Council for Science, to address the meeting.

In thanking Mr Suzuki and Dr Yoshikawa, Dr Rutford referred to the emphasis they had put on global research and international co-operation in Antarctica. He also stressed the importance of other uniquely Antarctic research opportunities and mentioned subglacial lakes as an example. Their Imperial Highnesses then requested if they might stay for the morning session to hear the scientific reports of several of the Chief Officers of SCAR. SCAR was pleased to welcome Their Imperial Highnesses and was very appreciative of their interest in Antarctic research.

The foremost agenda item for the Delegates was the discussion of the report of the *ad hoc* Group on SCAR Organization and Strategy (the Review of SCAR). Delegates divided into four groups, each chaired by a member of the Executive with an advisor from the Review Group and a rapporteur. After the discussions had been completed the four rapporteurs reported to a plenary meeting of the



The logo for the XXVI SCAR and XII COMNAP meetings in Tokyo, July 2000.

Delegates. There was unanimous support for many of the recommendations but there were several that stimulated spirited exchanges. Whilst several of the proposals were motherhood statements others had far reaching consequences. The most important of these were that the Secretariat should be headed by a new Executive Director, that Delegates should have current expertise in Antarctic research and be more actively engaged inter-sessionally, that better communications both internally and externally were essential, and there should be a more proactive stance both with the ATS and with the general public. Crucially, the report recommended major changes in the sci-



The Delegates at XXVI SCAR in Tokyo, Japan, July 2000.



The SCAR Executive Committee at XXVI SCAR in Tokyo. Left to right, front row: David Walker, Bob Rutford, Tony Rocha-Campos, Roland Schlich; back row: Peter Clarkson, José Valencia, Fred Davey.

entific-level structure of SCAR. With so much change taking place concurrently there were, of course, predictable complaints from those whose cosy world had been disturbed. However, the majority of SCAR people embraced this opportunity for a new approach.

It was recognized that, whereas the report identified the measures that SCAR needed to take, the report did not specify how these measures might be implemented. The Executive proposed the formation of an *ad hoc* Group on Transition, comprising the Executive Committee plus five additional members, to consider three of the recommendations specifically and to advise on how these could be implemented. The first meeting of this *ad hoc* Group would be in Amsterdam, The Netherlands, in conjunction with the COMNAP XII meeting and the meeting of the SCAR Executive during August 2001.

The members of the *ad hoc* Group on Transition were A L Clarke, S-H Lee, Y LeMaho, A Meloni and P E O'Brien. They considered each one of the Recommendations and made two of their own recommendations to the Executive Committee. The first was that the Executive Committee should send a letter to all National Committees urging them to implement specifically Recommendations 3, 7, 18 and 19. These Recommendations, on the activity of SCAR Delegates, support for

SCAR Officers, the qualifications of SCAR Delegates, and the role of younger scientists, were those that SCAR itself could not implement.

The second of their recommendations was that the Executive Committee should prepare a document for circulation to all National Committees and Chief Officers well in advance of XXVII SCAR giving: details of the proposed changes to SCAR meetings; details of the restructuring of the existing SCAR groups into Scientific Standing Groups, Standing Committees and Scientific Programme Groups; and details for phasing in the changes at XXVII SCAR. This document became known unofficially as the "White Paper" and was organized in four sections.

The first section dealt with the structure of SCAR Groups. There would be three Scientific Standing Groups (SSGs) on: Geosciences, Life Sciences and Physical Sciences. Together these would encompass the disciplines of the former Working Groups and the activities of the former Groups of Specialists. Each SSG could have up to four national representatives nominated by National Committees and the group would elect a Chairman, Deputy Chairman and a Secretary from amongst its members. Each SSG could establish Action Groups to address specific research topics within the discipline.

The SSGs, either individually or jointly, could establish Scientific Programme Planning Groups to develop a formal proposal to SCAR for a SCAR Scientific Research Programme to investigate a particular research area or field. Such proposals would be subjected to peer review to guide Delegates in their decision on whether or not to approve and fund a particular programme. The second section of the "White Paper" gave details of the procedure for the development and approval of a SCAR Research Programme.

The third section concerned Standing Committees. SCAR had had a Standing Finance Committee for many years but its

SCAR *ad hoc* Committee on SCAR Organization and Strategy

Recommendations

1. SCAR'S mission remains valid and SCAR continues to play an important role in fostering and coordinating science in Antarctica and in advising the Antarctic Treaty System and other organizations concerned with the Antarctic and Southern Ocean, but SCAR must take a more active and assertive leadership position in all matters related to science in Antarctica.
2. SCAR should update its mission in four areas by:
 - Increasing emphasis on the scientific capacity of all national groups working in Antarctica and on outreach to younger scientists;
 - Taking a more proactive stance with the Antarctic Treaty System in providing the highest level independent advice on scientific aspects of issues affecting the governance and management of Antarctica and the Southern Ocean;
 - Taking a more proactive position in the analysis of the impact of global change on the Antarctic region and in the contribution of science in Antarctica to the overall understanding of global change; and,
 - Increasing the dissemination of knowledge about Antarctica and about SCAR and its activities to scientists, national leaders, and the public.
3. SCAR Delegates – at the Delegate level – must become more actively engaged in the management of SCAR at SCAR meetings and also intersessionally.
4. Four Delegate-level committees should be established, each chaired by a SCAR vice president, with the following portfolios: Scientific Affairs, Outreach and Education, Scientific Liaison, and Internal Affairs
5. SCAR Vice Presidents should have titles corresponding to their portfolios, e.g., Vice President for Scientific Affairs.
6. The SCAR Executive Committee should be retained. In addition to processing business that comes before it presently, the Executive Committee should act intersessionally on advice or recommendations of the Delegate Committees or refer such recommendations to SCAR's next plenary session.
7. All SCAR officers are encouraged to seek a greater level of support at their home institutions through a greater level of in-kind and other administrative assistance but SCAR should also increase its budget for these purposes.
8. The past president of SCAR should serve ex-officio for one but no more than two years instead of serving a four-year term ex-officio.
9. While the scientific-level structure of working groups and groups of specialists has served SCAR effectively in the past, this structure should be replaced by a system of operating groups that can respond quickly and flexibly to emerging scientific opportunities in Antarctica and to changing demands on SCAR.
10. SCAR must adopt practices that create a timely circulation of documents and reports and must plan a meeting schedule that improves its ability to make informed decisions.
11. The Delegate Committee on Internal Affairs must give immediate attention and high priority to the increased efficiency and effectiveness of internal communications in SCAR.

12. SCAR must greatly improve its external communications with other scientific organizations, ATS, national committees or other adhering bodies and the public so that science in Antarctica and the Southern Ocean and the activities of SCAR are more widely known.
13. SCAR should appoint an *ad hoc* group of SCAR Delegates who do not have English as a first language to make recommendations to SCAR to maximize the effective use of English as the SCAR language of record and communication.
14. The SCAR Secretariat should be upgraded to an Executive Office headed by an Executive Director with duties comparable to Executive Directors of similar international scientific organizations.
15. SCAR must improve its infrastructure and capability to use information technology for internal and external communication.
16. A more proactive SCAR Executive Office will require larger facilities and upgraded support services.
17. SCAR should expand its financial resources by actively seeking philanthropic funds for some activities.
18. Recognizing that they must weigh many factors in the selection of SCAR Delegates, national Antarctic committees and other bodies adhering to SCAR should appoint Delegates with current scientific expertise in Antarctic research.
19. National Antarctic committees and other bodies adhering to SCAR should continue to give more attention to participation of younger scientists both in research in Antarctica and in SCAR's scientific operating groups.
20. In order to proceed expeditiously with the implementation of the changes recommended in this report, SCAR should consider waiving appropriate parts of its present Constitution and Rules of Procedure for two years, during which time the new structure will be put in place. After the structure and procedures evolve, the Constitution and Rules of Procedure should be amended as necessary.

terms of reference and membership were now formalized. There would be a new Data Standing Committee to advise SCAR on all matters relating to scientific data and to provide advice to National Antarctic Data Centres. There would also be a new Antarctic Treaty Standing Committee. This Committee would have broad terms of reference to advise SCAR on all matters relating to the Antarctic Treaty System, in particular to the preparation of papers for SCAR to present to the Antarctic Treaty Consultative Meetings. In effect this Committee would replace the official functions of GOSEAC and also be authorized to deal with those matters that GOSEAC had often considered unofficially, in the absence of any other group providing the relevant advice to

SCAR. Each of these Committees would have a membership of three persons, one of whom would be designated the Chief Officer and another the Deputy Chief Officer. Additional members could be co-opted on a temporary basis to provide specific advice on particular matters on the Committees' current agendas.

The fourth section of the "White Paper" on the structure of SCAR meetings introduced perhaps some of the most fundamental changes. The traditional two-week biennial SCAR meeting was to be split into two separate weeks about three months apart. The first week would comprise an Open Science Conference around which the SSGs and other SCAR groups would hold their business meetings. This

Robert H Rutford, President 1998–2002

Bob Rutford was born in Duluth, Minnesota, on 26 January 1933 and received his BA (1954), MA (1963) and PhD (1969) degrees from the University of Minnesota. He did military service with the US Army (1954–56) and spent part of this time in north-western Greenland, his introduction to the polar regions. Between 1958 and 1972 he held various teaching and research posts at the Universities of Minnesota and South Dakota. He made his first visit to Antarctica in 1959 to carry out geological research in the Ellsworth Mountains that would form the basis of his PhD thesis. His main research interests have been in glacial geology and geomorphology so the naming of Rutford Ice Stream was an appropriate appellation. From 1972 to 1975 he was Director of the Ross Ice Shelf Project while at the University of Nebraska in Lincoln. He then moved to Washington to become the Director of the Division of Polar Programs at the National Science Foundation (1975–77). His career then changed to university administration as Vice-chancellor for research and graduate studies, and Professor of Geology (1977–82) and as Interim Chancellor (1980–83) at the University of Nebraska. From here he moved to be President and Professor of Geology at the University Texas in Dallas (1982–94). Upon resigning the Presidency he was appointed Excellence in Education Foundation Professor of Geology in the Geosciences Department where he continued to teach part-time until 2007.

He has maintained his interest and connection with Antarctic research for more than 50 years and has visited the Antarctic in various capacities more than 20 times. He has attended every SCAR meeting from 1970 to 2004. He was US Delegate (1986–2004), Vice-



President (1996–98) and President (1998–2002). As President he oversaw the review of SCAR and was responsible for its implementation. He was Chairman of the National Research Council Polar Research Board (1991–95). He has received many honours and awards during his career, including an Honorary DSc from St Petersburg State Technical University, Russia, in 1994. He was President of the US Antarctic Society (1988–90). His latest honour was the naming of Mount Rutford, a 4,477-metre peak in the Ellsworth Mountains.

Over the years he has been an enthusiastic and committed supporter of SCAR, often in the face of stern opposition in his home country. He has also attended many Antarctic Treaty Consultative Meetings, both as an advisor on the US Delegation and as President of SCAR, where he has been an effective advocate for scientific research in the Antarctic and for the role of SCAR as the pre-eminent scientific advisor to the Antarctic Treaty.

would allow their reports to SCAR to be circulated to National Committees two months ahead of the Delegates' Meeting thereby giving the Delegates a reasonable time to read them, as opposed to the two days they had formerly during a traditional SCAR meeting. The SSGs feared that the Open Science Conference would undermine or even replace their formal disciplinary symposia and needed to be reassured that this would not be the case. A formal structure for the Open Science Conference was proposed with poster sessions, a one-day symposium on a selected theme, followed by a day of keynote addresses. The annual meeting of COMNAP would run in parallel to the Open Science Conference (in even-numbered years) and would include the SCALOP Symposium.

Although the original recommendation had been for four Delegate Committees it was decided that these would be reduced to two Delegate Committees, allowing every country to have a representative at both. One Delegate Committee would consider matters concerning two of the Scientific Standing Groups, the other Delegate Committee would consider matters concerning the third Scientific Standing Group and the Standing Committees. Two Vice-Presidents would be assigned to each Delegate Committee as most appropriate to the two agendas. The Delegate and Alternate Delegate representing each National Committee would decide who would attend each Delegate Committee. The Vice-President chairing each Delegate Committee would then report to a plenary session of the meeting. The Delegate Committees could be assigned additional tasks inter-sessionally and would report to the Executive Committee.

The final section of the "White Paper" outlined the arrangements for the XXVII SCAR meeting in Shanghai, China, during July 2002. It would be a two-week meeting and there would not be an Open Science Conference. In the first week the Working Groups and Groups of Specialists would hold their final meetings and re-

organize themselves into the three new SSGs. The SSGs would establish subordinate Action Groups as required. The Chief Officers of both the former groups and the new SSGs would be invited to present their reports to the Delegates' Meeting during the second week when the two Delegate Committees would be inaugurated. This meeting would be the last traditional SCAR Meeting and the XXVIII SCAR Meeting to be held in Germany in 2004 would be the first meeting to implement the new structure. The first week, including the Open Science Conference, would be held in Bremen during July 2004 and the Delegates' Meeting would be held in Bremerhaven during October 2004.

One area that was not addressed by the recommendations of the Review Committee was the question of gender balance in SCAR. Right from the start, SCAR had seen itself as a "men's club", which was not surprising given that in those days all Antarctic field scientists had to be male. However, a number of women began to attend the early biology and geology symposia and, as equal opportunity spread slowly through the national operations, female representatives were appointed in many of the Working Groups. It was not, however, until 1988 that a woman was appointed as a national Delegate to SCAR and they have yet to reach the dizzy heights of the Executive Committee. Given the increasing numbers of women actively working in Antarctic science this is surely likely to change in the near future.

Transition in China

In May 2002, at the invitation of the organizing committee for XXVII SCAR, the President and Executive Secretary of SCAR and the Chairman and Executive Secretary of COMNAP, visited Shanghai to view the facilities and accommodation for the meetings. Everything seemed to be very well-organized with ample accommodation for the plenary meetings and the meetings of the SCAR subgroups. The visitors then transferred to



The logo for the XXVII SCAR and XIV COMNAP meetings in Shanghai, China, July 2002.

Beijing where they met senior academic and government scientific officials before making tourist visits to the Forbidden City and the Great Wall of China.

In the event, the XXVII SCAR Meeting in Shanghai, China, July 2002, went extraordinarily well and, apart from a few minor problems, the transition from Working Groups and Groups of Specialists to Scientific Standing Groups went very smoothly. There were serious misgivings among the life scientists about the wisdom and practicality of bringing the biologists and human biologists (medics) under one umbrella again. A temporary solution was reached by the SSG being allowed a second Deputy Chairman from the medical community with the expectation that the situation would be resolved during the following two years and that the structure of the Life Sciences SSG would then be aligned with that of the other two SSGs at XXVIII SCAR in Germany. Peru was accepted as a Full Member but Estonia withdrew from Associate membership. The Delegates presided over the last rites for the old Working Groups and were pleased to see the rapid development of the new structures in the form of Scientific Standing Groups and their associated Action Groups. Jörn Thiede from Germany was elected the new President and Tony Rocha-Campos was made an

Honorary Member. The Executive Committee breathed a collective sigh of relief at the end of the Delegates' Meeting that the new SCAR had been born without a difficult period of labour.

The Chinese hosts had arranged magnificent facilities in the Shanghai Exhibition Centre for the two weeks of meetings and even the hotels were extraordinary with the competition between them to provide the most choices for breakfast – how do you choose from over 600 items? With the spectacular architectural developments lying alongside traditional buildings, the Bund and the busy river as well as the extensive range of Chinese cuisine everyone was able to sample, this was a most memorable meeting. Many Delegates took advantage of the opportunity to visit both the Polar Research Institute of China and its ship *MV Xue Long* (Snow Dragon) lying in the Yangtze River.

Bob Rutford was keen to provide some inducement for Delegates to stay beyond the end of the daily meeting to look at the posters in the science display and suggested that some wine and cheese should be provided. Peter Clarkson and Mandy Dalton were accordingly dispatched to a local supermarket to purchase the necessary supplies. The wine was not a problem but the cheese proved more difficult. After some considerable time spent searching the shelves of produce a small cheese section was located. There were two types of cheese, both imported from New Zealand, and nothing else. It transpired that cheese does not normally form part of the Chinese diet. As a result, they bought almost the entire stock!

SCAR Secretariat and structural changes

The SCAR Executive and Chief Officers, invited to the Executive Committee Meeting for the first time, met in Brest, France, 11–15 July 2003, alongside the annual COMNAP meeting. Much time was spent reviewing the proposals for the five SCAR Scientific Research Programmes. All agreed that the presence of the Chief

Jörn Thiede, President 2002–06

Jörn Thiede was born in Germany on 14 April 1941. He studied geology at the Universities of Kiel (Germany), Buenos Aires (Argentina), and Vienna (Austria) between 1962 and 1967, receiving his Diploma in Geology (equivalent to an MSc degree) in 1967 and his PhD in 1971, both from the University of Kiel. His first position was as a laboratory technician at the Dirección Nacional de Geología y Minería, during his stay in Buenos Aires in 1963. Later he was an Amanuensis (Research Associate) and Lecturer for Exogene Geology at the University of Aarhus (Denmark) between 1967 and 1973. From 1973 to 1975 he was Assistant Professor and Senior Lecturer in Zoological Micropalaeontology at the University of Bergen (Norway). Then he moved to the United States where he was Assistant and Associate Professor in Geological Oceanography at Oregon State University until 1977 when he returned to Norway to the Chair of Historical Geology at the University of Oslo, 1977–82. He then returned to Kiel for the next 15 years, initially as Professor in Palaeontology and Historical Geology, 1982–87. He became Director of the GEOMAR Research Centre for Marine Geosciences at Kiel from 1987–95, and Head of the GEOMAR Department of Palaeo-Oceanology, 1987–97. In 1997 he was appointed Director of the Alfred-Wegener-Institut (AWI) für Polar- und Meeresforschung in Bremerhaven (Germany) and was also made an Honorary Professor of Palaeo-Oceanology at the University of Bremen in 1998. He retired from AWI in 2006 but continued in research at the University of Kiel. He has membership or fellowship of various scientific academies in several countries, reflecting his peripatetic career, and was awarded the Steno Medal of the Danish Geological Society (1984) and the Murchison Medal of the Geological Society of London (1994).



Jörn Thiede has achieved international recognition as a marine geologist and is also known for his studies of the climatic evolution of the North Atlantic – Arctic region, “from greenhouse to ice-house”.

As Director of AWI he became the German Delegate to SCAR in 1997. At his first SCAR meeting, XXV SCAR in Concepción, Chile, in 1998, he was one of the instigators of the review of SCAR. He was elected President at XXVII SCAR in Shanghai, China, 2002, and, as such, was instrumental in implementing the recommendations of the SCAR Review. He hosted the first two-part SCAR meeting in Bremen and Bremerhaven in 2004 at which the first of the regular SCAR Open Science Conferences was held. He also initiated the SCAR Fellowship Programme that was originally funded by the award to SCAR of the Prince of Asturias Prize in 2002. In recognition of “his efforts in taking SCAR to new heights” Jörn Thiede was elected an Honorary Member of SCAR by acclamation at XXIX SCAR in 2006.



The official photograph of the SCAR Delegates and the Chinese hosts taken at the XXVII SCAR Banquet on 25 July 2002.

Back row (standing left to right)

Zhang Jie, Liu Shunlin, Maxim Moskalevsky, Pedro Skvarca, Vladimir Kotlyakov, Christo Pimpirev, Ian Allison, Andrej Gazdzicki, Mrs Kennicutt, Henry Valentine, Chuck Kennicutt, Hugo Declair, Sohan Jain, Georg Kleinschmidt, Heinz Miller, Leopoldo Sancho, Des Lugg, Arnoldus Blix, Nesho Chipev, Sang-Hoon Lee, Jiang Mei, Jan Stel, Chen Danhong, Alberto Foppiano, Zhao Ping, Mrs Foppiano, Mandy Dalton, Weijia Qin, Tang Yongxiang;

Third row (seated left to right)

Mrs Stel, David Walton, Michael Stoddart, Olav Loken, Petteri Taalas, Jean-Claude Hureau, Rasik



Ravindra, Antonio Meloni, Maurizio Candidi, Gennardi Milivensky, Ad Huiskes, Julian Dowdeswell, Albert Lluberas;

Second row (seated left to right)

Dick Hedberg, Jerónimo López-Martínez, Kasuyuki Shiraishi, Hideki Shimamura, Prem Pandey, Steven Bigras, Jörn Thiede, Olav Orheim, Chris Elfring, Carlo Alberto Ricci, Christian Schlüchter, Fred Davey, Ronald Woodman, Mrs Woodman, Bartolomé Grillo;

Front row (seated left to right)

Chen Liqi, Zhang Zhanhai, Mrs Rapley, Chris Rapley, Roland Schlich, Zengdi Pan, George Knox, Bob Rutford, Qu Tanzhou, José Valencia, Li Haiqing, Wei Wenliang, David Walker, Antonio Rocha-Campos, Peter Clarkson, Dong Zhaoqian, Huigen Yang.

Chapter 6. The Rejuvenation Years (1998–2003)

Officers, invited there for the first time, did much to inform these discussions, a great improvement over the previous practice of the Chief Officers holding a short informal meeting with the Executive Committee at each biennial SCAR meeting. Five young scientists had been selected to receive awards under the SCAR Fellowship Programme, funded by the Prince of Asturias Prize to SCAR. The SCAR and COMNAP Executive Committees held a joint meeting and noted with satisfaction the progress being made with the Antarctic Master Directory (AMD). SCAR and COMNAP were each paying US \$5,000 to the Global Change Master Directory (GCMD) to populate the AMD with metadata records. However, COMNAP decided to reduce its contribution to one third of the total while SCAR would increase its contribution to make up the balance.

There were some Recommendations of the *ad hoc* Group on SCAR Organization and Structure that had not been fully addressed, specifically those concerning the SCAR Secretariat, its staffing and operation. The most important of these was the appointment of an Executive Director, an especially taxing development because of the cost implications. The post was advertised internationally and, in late August 2003, three candidates were interviewed by the Executive Committee. The post was offered to Dr Colin P Summerhayes, a British oceanographer, who was then the Executive Director of the Global Oceans Observing System located at the Intergovernmental Oceanographic Commission offices in Paris, France. Prior to that he had been Director of the Deacon Laboratory of the Institute of Oceanographic Sciences. Thus he had a wealth of administrative experience and had also done research in the Southern Ocean but had never visited Antarctica. He accepted the post and began working full time at the Secretariat from April 2004.

During the 1990s there had been criticism of the quality of accommodation provided to SCAR for the Secretariat

within the Scott Polar Research Institute. Like most institutes, space was at a premium and rent-free tenants are low on the priority list but, in 1999, following a major extension to the Institute, primarily to accommodate the ever-growing library, it was possible to refurbish the accommodation of the Secretariat. Then, in 2002, following the appointment of Professor Julian Dowdeswell as the new Institute Director, it was possible for the Executive Secretary to move to a fine office on the first floor. A little later, the adjacent office became vacant and was immediately ear-marked in readiness for the arrival of the Executive Director. The Secretariat now enjoyed prime office space in a suite of two offices. Gradually the required changes to the SCAR Secretariat were being achieved.

The recommendation of the Review Committee was that the Executive Secretary should be replaced by an Executive Director and an Executive Officer; the Executive Secretary should disappear! Accordingly, Peter Clarkson agreed to retire at his 60th birthday, having provided an overlap of more than a year with the Executive Director and allowing a short training period for the new Executive Officer. The latter post was advertised and Dr Marzena Kaczmarek, a Polish glaciologist working in Tromsø with Norsk Polarinstitut, was appointed. Much of her training was done during XXVIII ATCM in Stockholm, Sweden, that also gave her the opportunity to meet Treaty Delegates and the several SCAR people who were attending the meeting. The final handover took place in Sofia, Bulgaria, during the meeting of the Executive Committee in July 2005. On the first night of the meeting when all were present, including the Chief Officers of the SSGs, a dinner was held to welcome Marzena to SCAR and say farewell to Peter. A collection had been organized and David Walton had purchased an antique map of Antarctica that he presented to Peter on behalf of SCAR, pointing out that he should have endless hours of fun correcting the spelling of place-names!

The new structure of SCAR was working well. The SSGs were increasingly active and together were proposing five new Scientific Research Programmes that were circulated for peer-review prior to presentation to the Delegates at XXVIII SCAR for adoption. However, in common with most new organizational structures, minor difficulties were emerging that would need to be discussed at the SCAR Meeting. The system of Action Groups beneath the SSGs had its shortcomings. Action Groups were expected to be of short duration to address specific scientific problems but the SSGs argued that some Action Groups would need to have a significantly longer life because their subject areas were ongoing and not amenable to short-term approaches. SCAR accepted the validity of this argument and at XXVIII SCAR it was agreed to introduce "Expert Groups" under the SSGs as required. The first of these would be the Expert Group on Human Biology and Medicine. This was an entirely logical step and it also avoided the need for the SSG to have a second Deputy Chairman to cover the medical interests. This was followed by two further Expert Groups on Birds and on Seals. The Geosciences SSG has five Expert Groups: Geospatial Information – Geodesy (GIANT); Permafrost and Periglacial Environments (PPE) and Antarctic Permafrost And Soils (ANT-PAS); International Bathymetric Chart of the Southern Ocean (IBCSO); Antarctic Digital Magnetic Anomaly Project (AD-MAP); and Antarctic Neotectonics (AN-TEC). The Physical Sciences SSG has four Expert Groups: Antarctic Astronomy and Astrophysics (AAA); Ice Sheet Mass Balance and Sea Level (ISMSS); Operational Meteorology in the Antarctic (OpMet); and the Joint SCAR/SCOR Oceanography Expert Group.

XXVIII SCAR, Bremen and Bremerhaven

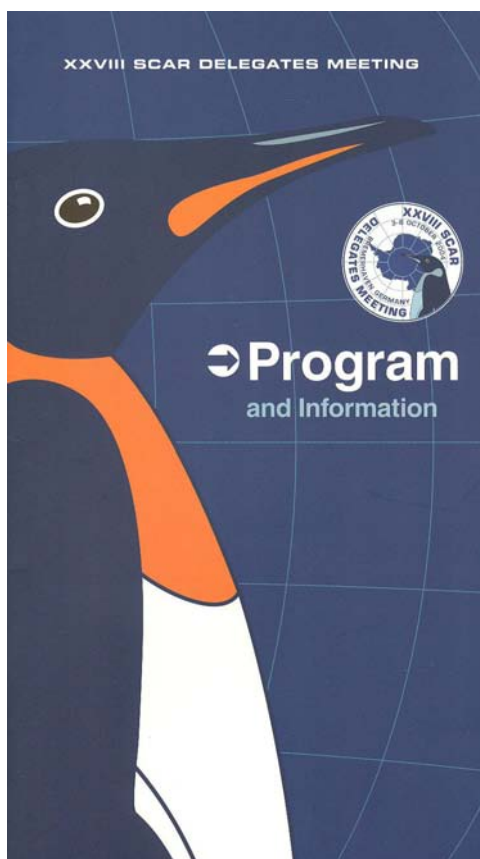
Germany went all out to make the new meeting format a success. The huge international conference facilities in Bremen allowed a record number of scientists to attend the first Open Science



The logo for the XXVIII SCAR and XVI COMNAP meetings in Bremen, Germany, July 2004.

Conference in July 2004, and one of the chief memories of this meeting must be the very large number of young scientists who were there for the first time. Alongside the Open Science meeting were the new SSGs and the COMNAP meetings, with plenty of opportunities for interactions between the different groups and disciplines. In addition there was a trade exhibition and even a display of Antarctic aircraft out at the airport. With over 1000 people from 42 countries (six of which were not even SCAR or COMNAP members) in Bremen, this new venture was clearly a major success.

The Delegates' Meeting took place in early October 2004 in Bremerhaven, Germany. It began unusually with a series of presentations and then an open forum discussion before tackling the normal agenda. In particular there were presentations from Jörn Thiede on the role of SCAR at the ATCM, from Colin Summerhayes on SCAR and the International Polar Year (IPY) and from Professor Walter Kroll, President of the Helmholtz Foundation on the importance of polar science to Germany. The meeting admitted Switzerland to Full Membership and Malaysia to Associate Membership. Bob Rutford was elected an Honorary Member for his exceptional service to SCAR. The first draft Strategic Plan was discussed



The cover of the programme booklet for the XXVIII SCAR Delegates' Meeting in Bremerhaven, Germany, October 2004.

and a revised Constitution and Rules of Procedure accepted. The Delegates also accepted the establishment of an Action Group on the History of Antarctic Research.

The successful two-part XXVIII SCAR Meeting in Germany in 2004 still had its critics. The principal complaint was the additional cost for many Delegates to travel to Germany twice in one year. This potential criticism had been anticipated right from the first presentation of the *ad hoc* Group's report but there was a hope that the success of the new structure might overcome this objection. While many saw the benefits of the divided meeting others, particularly those travelling to Germany from the Southern Hemisphere were, not surprisingly, find-

ing difficulty in funding attendance at both parts of the meeting.

The same problems, of course, applied to the Northern Hemisphere countries when it came time to travel to Australia. There were more of them and they made more noise, suggesting by implication it was further to Sydney from London than it was from Sydney to London! So the Australian hosts of XXIX SCAR in 2006, recognizing this problem, agreed that, for XXIX SCAR only, there should be a return to the single two-week meeting. The Russian hosts of XXX SCAR in 2008 compromised by holding the Open Science Meeting in St Petersburg during the first week after which the Delegates and Chief Officers travelled to Moscow for the Delegates' Meeting at the beginning of the following week. At the same time, the Delegates' Meeting was shortened to just 3 days, making it even more difficult to justify a second overseas trip for the Delegates. As a result it was agreed that SCAR should return to a single biennial meeting.

Some might be tempted to suggest that this indicated that the restructuring of SCAR had not been as successful as it first appeared but this would be unfair. Any structure for an organization should be able to evolve to meet changing needs and SCAR is no exception. The real success of the exercise has been the re-vitalization of SCAR and its return to a prime position on the international stage of global scientific research.

The Prince of Asturias Prize

At XVI ATCM in Bonn, Germany, during October 1991 one Delegation proposed that the decade 1991 – 2000 should be declared the "Decade of International Cooperation in Antarctica". Some Delegations supported the proposal while others expressed the view that it was a bad idea because "we have been co-operating in Antarctica for over 30 years and people might ask what have we been doing until now". Not so, said another Delegate,

the declaration would simply emphasize our co-operation. Eventually the meeting adopted the proposal but it was buried within the text of a declaration to celebrate the 30th anniversary of the entry into force of the Treaty and who, one wonders, outside of the Antarctic Treaty community has ever heard of the “decade of international Antarctic scientific co-operation, 1991 to 2000”.

Despite this scientific co-operation in Antarctica has been a foundation stone of SCAR, building on the unprecedented success of the IGY in Antarctica. Such scientific co-operation ranged from international agreements reached between Delegates at SCAR meetings to scientists of different nationalities sharing a tent at a remote location in Antarctica. Rarely, if ever, is such co-operation accompanied



Bob Rutford, Jerónimo López-Martínez and Roland Schlich in Oviedo, Spain, for the Prince of Asturias Prize ceremony.

by flag-waving and media attention but it does not always pass unrecognized.

In 2002 the SCAR Secretariat received a letter from the Prince of Asturias Foundation in Spain that SCAR had been awarded its prize for “International Co-



The SCAR representatives (left to right) Peter Clarkson, Jerónimo López-Martínez, Bob Rutford and Roland Schlich returning to their seats after receiving the award from HRH Prince Felipe. Bob Rutford is holding the Diploma.



The winners of the Prince of Asturias Prize for 2002. Queen Sofia and Prince Felipe are in the middle of the front row; Peter Clarkson, Bob Rutford, Jerónimo López-Martínez and Roland Schlich, representing SCAR, are on the right of the back row.

operation, 2002". The announcement was greeted with total surprise but great appreciation. The entire Executive Committee and their wives were invited to the ceremony in Oviedo but only Bob Rutford (Past President), Roland Schlich (Vice-President), Jerónimo López-Martínez (Vice-President) and his wife, and Peter Clarkson (Executive Secretary) were able to attend. HRH Crown Prince Felipe of Spain, Prince of Asturias, presided over a magnificent ceremony and presented the Diploma. The SCAR party and the other prize-winners were treated like royalty, making the whole 3-day event a most memorable occasion. The Diploma and the Joan Miro sculpture now reside in the SCAR Secretariat.

At XXVIII SCAR the Delegates decided that the cash prize of €50,000 would

be used to fund a fellowship scheme for young SCAR scientists to undertake a research programme at a facility in a country other than their own. They were to be known as SCAR Prince of Asturias Fellows (Appendix 5) and the first round of awards attracted 32 applications from 18 countries.

Antarctic Treaty interactions

The ratification of the Protocol for the Protection of the Antarctic Environment in 1998 had allowed the Treaty finally to establish the Committee for Environmental Protection (CEP). Until this time at each ATCM a Transitional Environmental Working Group (TEWG) had been formed to work along the lines of the CEP to prepare much of the initial work that the



The Prince of Asturias Prize for International Co-operation, 2002. The Diploma (above left) and the Joan Miro sculpture (above right), both now in the SCAR Secretariat.

Four of the first five SCAR Prince of Asturias Fellows at XXVIII SCAR, Bremen, 2004.

Left to right: Barbara Delmonte, Steven Boger, compère, Cristina Sobrino, Cai Minghong. Elanor Bell was wintering in Antarctica and unable to be present.



Chapter 6. The Rejuvenation Years (1998–2003)

CEP would have to do so that it could be put into effect immediately after the Protocol was ratified and thus entered into force. SCAR's input to the TEWG and the CEP was considerable in working and information papers as well as in answering technical questions that arose during discussions. Slowly the level of expertise in the national delegations increased and as it did the CEP decided that SCAR was no longer required to provide advice on some topics

In 2002, GOSEAC was replaced by a Standing Committee on the Antarctic Treaty System (SCATS), a small core committee that would consider the tasks laid on SCAR by the ATCM and develop the appropriate advice. This might be done by electronic correspondence with the relevant experts inside or outside SCAR, or by bringing them together for a meeting. This system has, perhaps, not been working quite as well as was originally envisaged but some of the requests coming from the ATCM are so specific that they would have been beyond the collective expertise of even a GOSEAC group. Nevertheless, SCAR continues to provide independent scientific advice to the ATCM that is generally welcomed. There is some antagonism towards SCAR in some quarters of the CEP where it is felt that the CEP, not SCAR, should be providing the relevant advice to the ATCM. SCAR might be willing to accept this position, and thereby lighten its load, if it believed that the CEP could provide the advice but, at the present time, the national representatives to the CEP, good though they may be, do not collectively have the same breadth and depth of experience and knowledge as that from which SCAR can and does draw to develop its advice. Until this situation changes, SCAR must continue to provide its scientific advice to the Treaty as it has done so successfully in the past. Most of the instruments and recommendations enacted by the Antarctic Treaty over the past 50 years in matters of science, conservation and the environment have been based on SCAR's input. SCAR should be justifiably



Jack Sayers, Executive Secretary of COMNAP, Tony Rocha-Campos, President, and Peter Clarkson, Executive Secretary of SCAR, looking particularly concerned during a discussion at XXII ATCM in Tromsø, Norway, May – June 1998.

proud of its record in assisting the Antarctic Treaty Parties to ensure the wise and effective governance of Antarctica

At no point in the last fifty years did the Treaty Parties ever agree to fund any of the requests they put to SCAR for information and advice. Not only did meeting these requests involve very considerable time commitments outside of scientists normal employment but SCAR itself funded the meetings of GOSEAC and some of the special workshops needed, for example, to deal with marine acoustics. Sometimes fulfilling a request would involve years of work by a considerable number of people only to be blocked at the Treaty for political reasons. In 1996 at XX ATCM SCAR was asked to develop a proposal on how a State of the Antarctic Environment Report might be prepared to fit within the UNEP series covering the rest of the world. Most of the Treaty Parties were already contributing to the series for their national territories. Over a period of six years GOSEAC worked with the Working Groups in SCAR to develop several different approaches to how this might be done, sending several papers to the CEP to implement this. Throughout all this period progress was blocked by a single Party and no general assessment was ever made despite the apparent enthusiasm of several Parties. Only New Zealand in the end was willing to initiate any studies and used some of these initia-

tives itself to prepare an excellent *State of the Ross Sea Environment Report*.

A more positive result was obtained for the discussions on marine acoustics. Germany had become concerned that marine geophysics work could be having a seriously detrimental effect on marine mammals and raised this at the CEP. There was little expertise in these fields around the table and it fell to SCAR to organize a series of workshops to bring people together to advise on the possible damage and the value of mitigation procedures. When this began there was an immediate impact on science when the German Umweltbundesamt (UBA), decided to ban geophysics work from the AWI research vessel *Polarstern*. There was very little research on acoustics and marine mammals available from the Southern Ocean so scientists from elsewhere in the world were called to examine the problem. A series of reports from SCAR highlighted the need for new research around the Antarctic and provided a new system for assessing the risk to marine animals of air guns and other acoustic systems.

Changing from Working Groups to Standing Scientific Groups

There were those who saw the discussions about names for the new scientific committees as mere semantic wrangling. Since the same people would be active on them how could a change of title matter? In this case it did matter as the remits for the major committees were changed, the expectations of the Delegates were different and the management structure had been completely rebuilt. The task for the committee chairs was to move from one format to the other without losing any of the key elements already in progress, facilitating the discussions so that there was agreement on how to implement the new plans and encouraging new thinking on science objectives and issues.

The Biology WG, led initially by Yvon LeMaho (France) and then by Steven Chown (South Africa), continued to try and organize on a wide variety of fronts.

The BIOTAS programme finally ran out of steam and was formally closed at the Concepción meeting, although a successor was already being discussed. Meanwhile the EASIZ programme was steadily developing its activities under the leadership of Andrew Clarke (United Kingdom), with multiple cruises and increased work from shore stations. A mid-programme symposium was held in Bremerhaven in July 1999 which resulted in a book "*Ecological studies in the sea ice zone*" published in 2002. The programme came to an end with the final symposium in Korčula, Croatia in 2004, having involved more than 150 scientists from 17 countries. Meanwhile the Subcommittee on the Evolutionary Biology of Antarctic Organisms was progressing much more slowly with a workshop in Curitiba, Brazil in May 1999. The biologists were already committed to the Seventh SCAR Antarctic Biology Symposium in Christchurch, New Zealand, 31 August – 4 September 1998 entitled *Antarctic ecosystems: models for wider ecological understanding*. Over 200 scientists attended from 19 countries. The Netherlands hosted the 8th SCAR Antarctic Biology Symposium "*Antarctic Biology in a Global Context*" during 27 August – 1 September 2001 at the Vrije Universiteit in Amsterdam.

The Seals GoS continued to focus on the Antarctic Pack Ice Seals programme with several successful field seasons. They made a recommendation in 2000 that fur seals should be removed from the Specially Protected Species list but reserved their position on Ross Seals. The Bird Biology Subcommittee continued to build up their central database on banding as well as synthesizing data to allow identification of Important Bird Areas (IBAs). Although defining IBAs was in response to a request from Birdlife International they felt that it would help in assessing the representativeness of the existing Specially Protected Areas as far as birds were concerned. Assessing the conservation status of particular species like Giant Petrels and Macaroni Penguins had also become a priority.

At much the same time the glaciologists had arranged the 6th International Symposium on Antarctic Glaciology in Lanzhou, China, 5–9 September 1998 together with a formal meeting of the Working Group on glaciology. The 7th International Symposium took place in Italy in 2003. The Group was putting major efforts into the Ice Sheet Mass Balance (ISMASS) programme as well as compiling all available ice velocity data to produce an ice flow overlay to the map of the bed topography underlying the Antarctic ice sheet (BEDMAP). A meeting in Durham, New Hampshire in April 1999 organized by GLOCHANT took stock of progress with the International Trans-Antarctica Scientific Expedition (ITASE) and agreed several new traverse routes that would be attempted in the next 10 years. Although it was not directly part of this Working Group's activities they were especially interested in the developments on subglacial lakes. Robin Bell and David Karl organized the first workshop on these lakes in Washington DC 7–8 November 1998 and this brought together a new interdisciplinary group that then met at Lucy Cavendish College, Cambridge in September 1999 to discuss the science potential of Vostok Subglacial Lake. The meeting stimulated considerable public interest and the following year SCAR decided to form a Group of Specialists on Subglacial Antarctic Lake Exploration (SALE) whose enthusiasm spawned a whole series of meetings in Ottawa (2001), Oregon (2001), Amsterdam (2001), Santa Cruz (2002), Palo Alto (2003), and Grenoble (2006) and whose activities were in due course converted into one of the new SCAR science programmes.

The Geology WG was not well-attended at Concepción and little new activity was agreed, not least because of the reduction in geological field work by France, Germany and the USA. Solid-Earth Geophysics WG was equally poorly attended but was able to report progress with Antarctic Digital Magnetic Anomaly Programme (ADMAP) and Antarctic Digital

Gravity synthesis (ADGRAV), as well as agreeing at the joint meeting with the Geology WG on the need for a new Group of Specialists on Antarctic Neotectonics (ANTEC). The joint meeting also discussed the future options for Antarctic drilling now that the activities at Cape Roberts were running down. The geologists and geophysicists met for the 8th International Symposium on Antarctic Earth Sciences in Wellington, New Zealand, 5–9 July 1999. The joint meeting of the two groups in 2000 heard concerns from German earth scientists about new permitting restrictions on geophysics work and bottom sampling, a situation report echoed in the reports from the SCAR observers to Antarctic Treaty meetings where Germany had been trying to persuade other countries to introduce a similar draconian system. The earth scientists met again for their 9th International Symposium on Antarctic Earth Sciences (ISAES) in Potsdam in 2003.

Rather late in the day at XXVI SCAR in 2000 the Solid-Earth Geophysics Working Group agreed to merge with Geology as the Working Group on Geosciences, just in time to be re-organized out of existence in 2002. The work started many years earlier on mapping the underlying bedrock of Antarctica finally came to fruition with the publication of BEDMAP based on all the radar sounding data available. The geophysicists also finally produced a new magnetic anomaly map for the continent.

At this stage the existing Groups of Specialists continued to meet as previously arranged. Indeed, the pressing business of the ATCM meant that the agendas for the Tenth Meeting of GOSEAC in Bad Schauenburg, Switzerland, 21–25 September 1998, the Eleventh Meeting held in Montevideo, Uruguay, 19–23 July 1999 and the Twelfth in College Station, Texas 24–27 April 2002 were all very full. In Switzerland the Group discussed the future role that SCAR might play in the CEP, the commercial exploitation of biological resources, environmental monitoring, input to the CEP Protected Area workshop,

codes of conduct for both visitors and field workers, and introduced species. Michael Oehme, who hosted the meeting, had also arranged a most welcome wine tasting visit to a local vineyard just when spirits were flagging! At the Montevideo meeting the Group provided input to the SCAR *ad hoc* Review Group, discussions on science input to the liability discussions (especially with respect to damage and restoration), revision of six protected area plans, scoping for the State of the Antarctic Environment Report (SAER) and further work on monitoring. Captain Aldo Felici arranged a short excursion for the Group to Punta del Este which included a visit to a salsa dancing school for children.

In 2001 the Group organized the first of what would prove to be a series of workshops to examine the impacts of marine acoustics, especially seismic sounding with air guns, on marine mammals in order to provide expert advice to the CEP. At their final meeting the Group was unconvinced that replacing GOSEAC with the new Antarctic Treaty Standing Committee would allow the quality and diversity of outputs to be maintained and offered some last advice on how the new committee should try to function. The Group continued to provide advice on both Managed Areas (2 sites) and Protected Areas (13 sites) as well as developing further advice on bioprospecting, liability issues, SAER, and the proposed review of Specially Protected Species. Chuck Kennicutt hosted a memorable dinner at his house and the Convenor was presented with the "Key to College Station" at a remarkable cowboy evening to mark the closure of the Group.

The future of the Group of Specialists on Global Change and the Antarctic (GLOCHANT) became an issue for the Executive Committee in this period. In 1997 the Executive had become concerned that the Group was losing focus and attempting too much, and this was combined with concerns over management when the convenor Charlie Bentley decided to step down. He was replaced by

Julian Priddle from the UK in 1998 but in 1999 both the Programme Co-ordinator Ian Goodwin and Julian Priddle resigned, leaving the programme adrift in the middle of the SCAR re-organization. Goodwin left because the funding for his post from the Antarctic Co-operative Research Centre dried up whilst Priddle left Antarctic research. Whilst the three major projects ASPeCt, Antarctic Ice Margin Evolution (ANTIME) and ITASE were all well-established the work on mass balance of the ice sheet was still not adequately organized despite the efforts of the Working Group. The seventh GLOCHANT meeting was held in Durham, New Hampshire, United States, 15–17 April 1999.

The physicists and chemists lead by John Turner (United Kingdom) continued to show considerable activity with the Physics and Chemistry of the Atmosphere (PACA) Working Group organizing three symposia at the Tokyo meeting on Climate Variability and Change in the Antarctic from Observations and Modelling Experiments; Chemical Processes in the Antarctic Troposphere and Stratosphere; and Antarctic Precipitation and Mass Balance, this last being a joint symposium with the Working Group on Glaciology. PACA recognized the need for a database of Antarctic climate observations over the last 50 years and established a new project called Reference Antarctic Data for Environmental Research (READER) to undertake this work. A project begun in 1994 – First Regional Observing Study of the Troposphere (FROST) – came to an end in 2000 have resulted in 16 important papers and several special issues of journals, with the original seedcorn funding of \$5000 from SCAR having been multiplied ten-fold by other primary grants attracted to the project. The workshop held in 1998 in Australia on weather forecasting came to fruition in 2000 with the publication of the first *International Antarctic Weather Forecasting Handbook*.

Solar-Terrestrial and Astrophysical Research WG led by Maurizio Candidi (Italy) continued to extend the Antarctic Geospace Observatory Network (AGONET)

Chapter 6. The Rejuvenation Years (1998–2003)

and established a central database for pooling the data from all the observatories. Increasing recognition of the potential for astronomy from Antarctica had stimulated two workshops on this which was now seen to be a major developing field for the future.

The WG on Geodesy and Geographic Information was especially active during this period under the leadership of Andrew (Drew) Clarke (Australia) and John Manning (Australia). As well as publishing a new version of the Antarctic Digital Database (ADD) in 1998 they also managed to publish, in two volumes and on line, the *SCAR Composite Gazetteer*, for the first time listing all the known names for the Antarctic. It contained 33,000 names for 16,500 features and was derived from 20 countries as well as from General Bathymetric Chart of the Oceans (GEBCO). Whilst this was always the real duty of governments the sovereignty issues had made it impossible for the Treaty Parties ever to agree on how to undertake such a major activity. Yet the requirements of both science and logistics made it essential that order was brought into the chaotic system that the Parties had allowed to develop under the remit of “national responsibilities” whereby competing names had been given to the same features by different countries. The work of Roberto Cervellati and Chiara Ramorino (Italy), Jörn Sievers (Germany) and Janet Thomson (UK) was crucial in bringing this major project to fruition. A supplement published in 2000 listed a further 1258 names. When Version 3.0 of the ADD was issued in 2000 the WG was able to state that over 1000 users from 41 countries had already downloaded data from the web-site.

The Group also organized four symposia in this period – July 1998 in Concepción, 14–16 July 1999 in Warsaw, 18–20 July 2001 in St Petersburg and 14–17 September 2003 in Lviv, Ukraine. The Group continued to update the SCAR map and chart catalogue (again the most complete listing of its type publicly available) finally publishing it as a web-site listing in 2000. Other work produced standardized symbols for maps and agreed metadata standards for all types of geographic and geodetic data; set up a project for a single GIS system for King George Island; and made further efforts to extend the geodetic observatory network (now with over 18 countries participating). New projects included an attempt to establish a catalogue of satellite and aerial imagery, look at the possibilities for on-line atlases, and improve access to all Antarctic tide gauge data.

It is readily apparent from all this activity that SCAR had awoken from a long period of slumber. Obviously many of these activities had been drifting gently along with the stream, or perhaps more ponderously with the glaciers, but the re-organization of SCAR, or at least the threat of it, had re-energized the groups. The implementation of the review recommendations, together with the emergence of new and enthusiastic younger scientists and more active SCAR Delegates, gave SCAR a new lease of life. As we shall see in the following chapter, the new Executive Director provided the essential drive to ensure that the momentum was not lost and that SCAR would maintain and enhance its position on the international stage.



Above: Recording seed production (Kerguelen cabbage *Pringlea antiscorbutica*) for the study of plant response to climate change on Iles Kerguelen. Photograph: Niek Gremmen.

Below: Martin Haupt and Nico de Bruyn restraining a fur seal for instrumentation on Marion Island. Photograph: Steven Chown.



Chapter 6. The Rejuvenation Years (1998–2003)



Above: Coring sediments in a lake on the Tonsberg Peninsula, South Georgia. Photograph: Gunhild Ninis Rosqvist.

Below: Jean-Louis Birrien and Damien Vertet sampling hydrothermal gases to study viral and microbial communities in hydrothermal fluids in the fumaroles of Iles Kerguelen. Photograph: Sylvie Geiger.





Above: Researching the remains of Prince Olav Harbour whaling station on South Georgia, using protective clothing because of the asbestos. Photograph: Hamish Laird

Below: Justine Shaw (Australia) and Ethel Phiri (South Africa) investigating interactions between the indigenous *Azorella selago* and the introduced *Sagina procumbens* on Marion Island. Photograph: Steven Chown.



Chapter 6. The Rejuvenation Years (1998-2003)



Above: Two views of the camp at Spit Bay, Heard Island, the lower view with Big Ben in the background. Photographs: Eric Woehler.

Below: Eric Woehler taking pictures of a king penguin colony to count the birds. Photograph: Karl Rollings.

