

Guest editorial

Science in Antarctica — a matter of quality

Antarctic research has progressed steadily from the era of reconnaissance studies into a period of problem-oriented scientific investigation. The International Geophysical Year and the intensive work of the 1960s and 1970s have established fundamental knowledge of Antarctic environmental systems on which present and future activities can be planned. Antarctic scientists of all nationalities are now eager to accept and exploit the challenges presented by global change programmes. At its XXth meeting in Hobart in September 1988, SCAR proposed an Antarctic component for inclusion in the ICSU International Geosphere–Biosphere Programme. Antarctic science thus considers itself sufficiently mature to be able to contribute effectively to programmes of world scope. Indeed, involvement in such activities may be seen as mandatory in order to continue to underscore the credibility and mainstream relevance of Antarctic scientific endeavours.

Such a view has resulted from the thrusting of Antarctic interests onto the global scientific stage — the springtime depletion in stratospheric ozone, the detection of increases in concentration of certain radiatively active gases in the atmosphere from ice core studies, the possible consequences of ocean and atmospheric warming on the stability of the Antarctic ice sheet and thus on world sea levels, and the need to investigate the major carbon sink of the Southern Ocean.

The active courtship of global relevance of the Antarctic has, however, an important corollary. Simply put, it is this: *scientific credibility must be matched by scientific quality*. Antarctic research cannot rely on geographic novelty to gain international intellectual credence. The same standards and criteria as are applied to research in general (for instance timeliness, relevance and excellence) must be expected of all Antarctic research. It is a view endorsed by SCAR. The internationally-refereed or peer-reviewed literature should be the primary vehicle for promulgation of Antarctic results and concepts, rather than Antarctic symposia which, although hitherto predominant, do not attract the interest of the widest range of influential scientists. Such developments should not mean the loss of identity of Antarctic science: this can be achieved through the organization of specialist sessions at international meetings. Nevertheless there should be comment upon, criticism of and participation in Antarctic work by the corpus of the scientific community.

For too long Antarctic science has been directed towards the cognoscenti, producing at times a 'lobotomized scientific output' in which special symposia volumes at best, and national scientific reports at worst, unreviewed, lacking critical impact and elevating the trivial, have been a substitute for the rigorous assessment of methodology, measurements and full-exposure to the judgements of the international scientific community. Naturally good, indeed excellent papers and articles are published on Antarctic studies which receive widespread acclaim and recognition, but there is in my opinion much — far too much — insubstantial and facile activity resulting from inadequately planned, badly executed and poorly written research. As such it is damaging and has little benefit given the costs involved in all Antarctic studies.

Antarctic scientists cannot be complacent. To vitiate this view and strengthen both the actual and perceived value of Antarctic research it will be important, within all national Antarctic programmes, to examine carefully and continuously the quality of science activities, and to formulate a policy for the effective dissemination of results.

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