As time goes by: *Polar Biology* over the years 1982–2008

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The year 2008 marks a major caesura in the history of *Polar Biology*. In 1982, on invitation by *Springer Verlag*, Gotthilf and Irntraut Hempel have founded this journal to create an internationally recognized publication platform for the rapidly growing number of scientists working in different fields of biological and environmental research in polar regions. Since then, for almost 27 years, Gotthilf Hempel has served as managing editor and his wife Irma as technical editor of *Polar Biology* has processed about 2,500 manuscripts submitted for publication. Now both wished to retire from their posts which they had filled for almost three decades. On this occasion, the editorial responsibility has been re-unified in one editor-in-chief's hand again, as Rolf Gradinger and Bodil Bluhm (Fairbanks, USA) stepped down from their posts as managing and technical editor, respectively, who since 2004 had been in-charge for all manuscripts dealing with research in Arctic regions (Hempel et al. 2004).

Over the 27 years of its existence, *Polar Biology* successfully met the challenge every scientific journal faces—to increase readership, scientific reputation and overall quality of publication. This was achieved by applying an attractive combination of a fine-balanced trade-off between a broad thematic scope and a well defined journal focus. Strict quality control through peer-reviewing, rapid manuscript handling, and a close contact with the geographically

expanding polar science community made *Polar Biology* a major medium of conveying novel results and scholarly reviews of biological and ecological research in polar regions. Without doubt, this success can be primarily credited to the outgoing editors. I am sure that I can speak on behalf of the *Polar Biology* community as a whole—readers, authors, referees, editors and publisher alike—when I express my sincere thanks to Gotthilf Hempel for the leadership and direction he has provided for the journal, as well as to Irma Hempel for all the effort she has put into the tedious editorial work, without which the success of the journal would have not been possible. Our thanks also go to Rolf Gradinger and his wife Bodil Bluhm for their fine work over the past 5 years in editing a growing number of Arctic contributions.

On 1 October 2008, I have started working as new editor-in-chief of *Polar Biology* and took over the responsibilities of Gotthilf Hempel and Rolf Gradinger. I know my predecessors have set the bar very high and it will thus not be easy to live up to the expectations. I will do my best to continue the success story of *Polar Biology* and to consolidate—and, if possible, to expand—its reputation as a premier scientific communication channel providing timely, rigorous and insightful content for biologists working in the Arctic and Antarctic.

The new editorship is accompanied by a number of technical innovations, the most important of which is that since 1 October 2008, online submission and processing of manuscripts is obligatory. Consequently, the 'Instructions for authors' and the 'Instruction for reviewers' have been modified in some points. Now, a web-based integrated software, featuring greater technical support provided by the publisher for the editor, will lead through all stages from manuscript submission over peer-reviewing to eventual publication. We are confident that this change will even

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more ease the entire editorial process—not only for editor and publisher but also for authors and peer reviewers as well—and that it will result in a further decrease of manuscript handling time.

Moreover, to ensure the excellent quality of the journal and its continued active development, the editorial board has been revised and expanded by recruiting several new members. Besides the founding editors and the editor-in-chief, the new board consists of a team of 29 leading scientific authorities in their fields. It thus covers a broad range of competence fields relevant to the ever widening thematic scope of the manuscripts submitted for publication.

You are welcome to visit *Polar Biology*'s website (<http://www.springer.com/300>) to learn more about all the recent changes.

I would like to take the opportunity of this editorial to provide a brief review of *Polar Biology*'s development since its founding in 1982. During this time—almost three decades, so to say one generation of polar scientists—a variety of changes have had their impact on polar research in general and, hence, also the journal—changes in research technology, in political constraints, in funding priorities, and in research foci. In the 1980s and early 1990s emphasis was clearly on the exploration—and later also conservation—of potential natural resources in the Southern Ocean, particularly krill. From the mid-1990s until today the study

on evidence and impacts of global climate change in both polar regions became more and more important. Another highly relevant development was the opening of the Russian Arctic for international research in the wake of the Soviet 'Glasnost' policy introduced in the late 1980s. These aspects have been addressed in some detail in the editorial (Hempel et al. 2004) published 5 years ago on the occasion of the founding of *Polar Biology*'s Arctic editorial office. Therefore, I will not entertain them again. Instead, I will give a closer, more rigorous look on how the contents of *Polar Biology* altered in thematic and geographical scope over the course of time in response to the external forcing exerted by the changing framework conditions.

First of all, over the 27 years of its existence *Polar Biology* has grown significantly in volume since its rather modest beginnings in 1982 (Fig. 1). While then the yearly volumes were published in four quarterly issues, now there are 12 monthly issues each year. In its first year, the journal featured a mere total of 22 articles with altogether 180 pages, whereas in 2008, 164 original papers, short notes and reviews with a total of about 1,500 pages have been published—an almost tenfold increase in volume. Over the years, *Polar Biology* has communicated 2,430 scientific articles in total. The recent development of the ISI impact factor features a steep increase since 2005 to an all-time high of 1.734 in 2007 (Fig. 1).

Fig. 1 Number of scientific articles (Original Papers, Short Notes and Reviews; *bold line*) published each year in *Polar Biology* and the impact factors (*gray bars*) over the course of the years 1982–2008

Fig. 2 Percentages of the provenances (broken down to large-scale regions) of the communicating authors of articles (Original Papers, Short Notes and Reviews) published in *Polar Biology* over the course of the years 1992–2008

Polar Biology has always been characterized by a highly international community of authors—and very likely also readers. The provenances of the communicating authors span a wide range of countries (35 in total). The majority of papers (about 60% on average) have been published by scientists from Europe (Fig. 2), primarily from Germany (391 articles in total), the UK (244), Norway (159), Italy (151), and France (121). ‘Glasnost’ has had a tangible impact on the publication record, especially in terms of rising submissions from Polish scientists (56). Contribution from Russian colleagues (23), however, is still modest, considering the vast extent of the Russian Arctic and the intensity of polar research performed by the Russian science community. Scientists from the two North American countries USA (252) and Canada (94) have contributed amply to *Polar Biology*, accounting for about 14% of papers on average. Not surprisingly in view of their relative proximity to—and political interest in—Antarctica, Australia (179), New Zealand (73) (‘Oceania’ in Fig. 2) and South Africa (119) have been of similar significance as contributors of scientific papers (about 15% of articles published on average). A particular asset of *Polar Biology* is that over the years there has been a growing share (about 6% on average) of articles from Latin American countries with active research programmes in Antarctic regions—Argentina (103), Brazil (30), and Chile (23). And last but not least, there has also been quite a number of papers published by scientists from Japan (61) and more recently also from China (12), Korea (8) and India (8).

Consistently over all the years, the majority of papers published in *Polar Biology* dealt with research performed in Antarctica (66–89%), while Arctic articles accounted for 9–32% and only few papers explicitly addressed bipolar issues (Fig. 3).

As another consistent pattern, irrespective of the yearly number of articles, most papers dealt with marine organisms or habitats (60–85%; Fig. 4). Results from terrestrial research were reported in 12–35% of the papers published over the years, while freshwater issues were addressed in only 10% at maximum (Fig. 4).

This distribution is also evident when breaking down the published papers to the taxonomic groups or ecological habitats they focussed on (Fig. 5). The percentages of articles on terrestrial organisms (animals, plants/lichens/fungi, and microbes) were highest (about 30% at maximum) in the 1980s, but then they declined to shares of around 15%. Until the mid-1990s, the majority of the papers (up to 50%) communicated results from research on marine plankton, including Antarctic krill, reflecting the funding priorities at that time. However, since then the share of publications on plankton clearly decreased to about 10%. Reversely, over the years there was a growing number of articles on marine vertebrates (fish, sea birds incl. penguins, and mammals), which together could account for up to 40% of papers published per year. Marine seafloor organisms (zoobenthos, phytobenthos, and microbenthos) were subject of a variable number of papers, on average they accounted for approximately a fifth of the papers published, while the share of articles on sea ice ranged between 5 and 10%.

Fig. 3 Percentages of articles (Original Papers, Short Notes and Reviews) published in *Polar Biology* over the course of the years 1992–2008, communicating Antarctic, Arctic or bipolar research results (with total number of articles published each year as **bold line**)

Fig. 4 Percentages of articles (Original Papers, Short Notes and Reviews) published in *Polar Biology* over the course of the years 1992–2008, dealing with marine, terrestrial or freshwater organisms and habitats (with total number of articles published each year as **bold line**)

Based on this inventory of the trends in *Polar Biology*'s development over the past three decades, several possible lines of promoting subtle changes in the editorial policy can

be envisioned, such as the encouragement of more submissions on Arctic themes. Without compromising thoroughness in the evaluations, the new editorial board will strive

Fig. 5 Percentages of articles (Original Papers, Short Notes and Reviews) published in *Polar Biology* over the course of the years 1992–2008, broken down thematically to taxonomic groups or ecological habitats addressed

towards further speeding up manuscript handling. Accepted papers, once copy-edited, will continue to be rapidly published as ‘Online First’ articles on the journal’s website. We will attempt to achieve these goals by the prudent use of modern online communication technology, helping us to strengthen the trademark and major precept of *Polar Biology*’s past and future editorial policy: keeping close contact with our authors and referees, thus ensuring that published articles will continue to meet the high expectations of authors and readers. We are confident that the future will

see a number of novel ways in which this ambitious goal, together with a dynamic online development of the journal, will help to firmly consolidate *Polar Biology*’s reputation as one of the leading journals in polar research.

Reference

- Hempel G, Hempel I, Gradinger R (2004) Editorial. *Polar Biol* 27:193–194