



EDITORIAL NOTE

Research in Antarctica – challenging but necessary

ALEXANDER W.A. KELLNER

There seems little doubt that research on the Antarctic continent, one of the most remote places on the planet, excites the imagination of every investigator and arouses the fascination of the public. The countless reports of the first expeditions carried out to the frozen continent attract audiences from all over the world by showing situations of danger, tragedy and, above all, the overcoming of the great challenges imposed by nature in one of the most inhospitable places on Earth.

Today, almost 111 years after a team of explorers finally succeeded in reaching the geographic South Pole, scientists who carry out studies in Antarctica have much better conditions than the first polar explorers such as Ernest H. Shackleton (1874-1922), Robert F. Scott (1868-1912), and Roald E.G. Amundsen (1872-1928) - to name a few. However, even with the comfort and safety of modern vessels and good communication systems, the difficulties (and costs!) of working on the frozen continent are still considerable, especially for projects where camping is mandatory.

The need to better understand this area has never been greater, particularly given the ongoing modification of biodiversity (e.g., Chown et al. 2015), reinforced by the growing notion of the influence of climate change in the region (e.g., Hughes et al. 2021). Therefore, despite several disputes that have had to be mediated

over the years (e.g., Haward 2012), there has been a steady increase in scientific activity in the region. This is also the case of Brazil, which now completes four decades since the beginning of the Brazilian Antarctic Program, where all the country's research activities in this area are coordinated (e.g., Simões et al. 2013).

However, the well-known current difficulties that science faces in the country give rise to growing concern. On one hand, the pandemic, which despite showing the importance of science worldwide did not bring greater funding for research in Brazil (e.g., Oliveira et al. 2020). And now, Russia's invasion of Ukraine has increased the world economic crisis tremendously. The consequences of this ongoing war are not yet fully understood, but there is no doubt that it will negatively impact funding for scientific (and cultural) activities.

Despite the growing shortage of funds, including for the maintenance of journals (e.g., Kellner 2021), we are very proud to be able to present a set of studies produced by scientists from Brazil and other countries in Antarctica. A total of 57 papers focusing on various subjects are presented in this special edition, coordinated by the colleagues Jefferson Simões, Marcelo Leppe, and Juliana Sayão (Simões et al. 2022). This is quite an achievement of the scientific community, considering that the pandemic excluded scientific activity in the region by

countries like Brazil during 2020 and are still severely limited.

As one of the researchers who maintains an active project in Antarctica (e.g., Kellner et al. 2019), I would like to take this opportunity and express my opinion that there should be given more opportunities regarding the activity of Brazilian scientists on the icy continent! Despite some projects that, through special funds, manage to develop studies in several locations, the vast majority of research carried out under the Brazilian Antarctic Program are obliged to limit their focus on the northern part of the Antarctic Peninsula. Among the initiatives that should be put forward is the construction of an icebreaker in order to sail further south. This would also allow the country to build other Antarctic stations in addition to the Comandante Ferraz Antarctic Station, located in Admiralty Bay on King George Island. Recently rebuilt after the tragic fire of 2012, this is the sole station that the country maintains in this region. Being able to navigate at higher latitudes would also make it possible to build outposts further south on the Antarctic Peninsula, expanding scientific activities coordinated by Brazilian researchers.

Meanwhile, it is paramount to emphasize that, despite all the difficulties and challenges, investment in Antarctic research is necessary not only to better understand the influences of ongoing changes and the undeniable effects of climate change at a global level, but also to allow the country to participate in the discussion about the future of this remarkable place on our planet, as a permanent member of the Antarctic treaty. This special issue aims to contribute to achieving these goals.

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ALEXANDER W.A. KELLNER

<https://orcid.org/0000-0001-7174-9447>

Universidade Federal do Rio de Janeiro, Museu Nacional, Laboratório de Sistemática e Tafonomia de Vertebrados Fósseis, Departamento de Geologia e Paleontologia, Quinta da Boa Vista, s/n, São Cristóvão, 20940-040 Rio de Janeiro, RJ, Brazil

E-mail: kellner@mn.ufrj.br

