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EVOLUTION IN THE ANTARCTIC

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Evolution is the major unifying principle of biology pervading all levels of organisation from molecules to ecosystems. The Antarctic is a natural laboratory for evolutionary research but until recently there has been little focus on Antarctic evolutionary biology. The EVOLANTA programme provided a research framework to improve fundamental understanding of the evolutionary history and biology of the Antarctic biota, and to integrate this with new knowledge of the climatic and tectonic context within which evolution has occurred and continues to occur. Three scientific issues were identified: gene flow, evolutionary response to global change, and Antarctic/Arctic comparisons. Several aspects of evolution in the Antarctic were addressed: adaptive radiation and evolutionary history, gene flow, adaptation, life cycles, microevolution and biodiversity. EVOLANTA linked existing work and stimulated new research on evolution in response to climate change. It complemented other Antarctic programmes and provided the impetus to apply the new molecular biology to problems in Antarctic biology.