

## From the editor

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In 514 BCE a Chinese philosopher writing on the art of war advised commanders to “know the ground, know the weather; your victory will then be total”<sup>1</sup> Sun Tzu’s wise words, on the centrality of understanding the geography for planning and conducting military operations, are no mere aphorism. Ignoring the environment has been a source of defeat and disaster; adapting to changing nature is a channel to longevity and success. Knowledge of geoscience is integral to human security and to military studies.

Military action, properly executed, requires appropriate response to the physical features of the geography, the terrain and topography, the landscape and layout. In the English language, the juxtaposition in a word like battlefield exposes this interwoven existence inherent in the military environment. But, the field remains long after the battle, as military activity transforms landscape. There is a new layer of meaning long after the dynamic of conflict, as the spatial dimension is left altered and the land is left to bear the scar of the military action. We are starkly reminded of this in the centenary year commemorating the end of the Great War. The geography, weather, and terrain of that armed conflict – from the mud of trench warfare, to the glacial Alpine fronts, to the aerial battles over European airspace – all declare the influence of extreme physical environments on military operations. In the intervening century we have witnessed the capacity to expand our knowledge and understanding of the battle space through the development of scientific capabilities and the application of technology. This combination of historical contextualization and technological advancement informs the diversity of contemporary military geoscientific research.

In this issue guest edited by Lt Cdr (Dr) Hennie Smit and Cdr (Dr) Jacques Bezuidenhout, *Scientia Militaria* brings together a selection of articles exploring the range of research in the military geosciences. The articles selected are primarily from international authors who participated in the 2017 International Conference on Military Geosciences, held at the Stellenbosch Institute for Advanced Studies, South Africa. The articles will be of interest to those working in physical military geoscience and military geology, but the subjects covered will be of interest to military historians and to the wider readership alike. For example, in his contribution Ted Rose traces the history of the geologists and geophysicists deployed (the 42nd Geological Section of the South African Engineer Corps) into campaign areas during the Second World War, while Hermann Häusler recounts the work of the German geoscientific unit in North Africa in the same conflict.

New technological applications and data collection methods have also been responsible for recent advances in the study of military geosciences. The articles by Peter Guth, by Pierre Taborelli and his co-authors, and by Vittoria Laterza and her co-authors, demonstrate the use of new instruments like LiDAR, geographic

information systems (GIS) technology, and new types of spectrometric measurement, in advancing our scientific knowledge while bringing to light new elements of historical contextualization.

This is also demonstrated in the article by Marko Bulmer which deals with the more recent armed conflict in Syria and Iraq and documents the environmental degradation. While the 2007 to 2010 drought placed the region and its resources and people under extreme environmental stress, these conditions were made even worse by the military use of environmental degradation as a weapon. Bulmer's analysis of the oil and gas fires and the damaging levels of sulphur and other gases reveals the extent of dangerous levels of pollutants in the air, in the soil, and in the water. The immediate effects of this contamination are a complex humanitarian emergency, but the full impact and long term environmental consequences, what Bulmer refers to as the toxic legacy, are only slowly being understood.

## **Raymond Steenkamp-Fonseca**

### **Endnotes**

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<sup>1</sup> Sun-tzu, and Samuel B. Griffith. *The Art of War*. Oxford: Oxford University Press, 1963. p129.