

# Preface

The polar regions, once considered terra incognita due to their inaccessibility and lack of geographical attributes, are known in a much better way now—thanks to the spirit of man’s adventurism, quest for scientific knowledge and dawn of the satellite era. Though Arctic was known to Greeks from ancient times and some works as early as 1885 and 1903 (William Warren<sup>1</sup>; Bal Gangadhar Tilak<sup>2</sup>) described this region as cradle of human race even before last Glacial Maxima (10,000 BP), the scientific exploration gained seriousness with International Geophysical Year in 1957–58, when a concerted effort was made by the global community to understand several scientific mysteries associated with these areas, especially Antarctica. The concept of Himalaya, as a Third Pole, is rather a recent one.

Considerable progress in the field of science in Arctic and Antarctica has since been made. The science here, however, is intricately linked with geopolitics because of the inherent environmental and strategic interests that transcend the sovereign control of several nations of these regions. With thawing of sea ice in Arctic and strains in Antarctic Treaty, the geopolitics angle is becoming more and more relevant. India has been one of the pioneering members of the Antarctic Treaty System with Consultative Status since 1983. During the period of more than three decades since then, India has added two permanent research stations—*Maitri* and *Bharati*—and contributed significantly to scientific research in earth, atmosphere and biological sciences. As the effectiveness of the Antarctic Treaty is based on the suspension of the territorial claims of claimant nations for the period of the life of the Treaty (*article XII of Antarctic Treaty only talks of ‘Review’ and not expiry of the Treaty*) and a resolve for ‘comprehensive protection of the Antarctic environment and dependent and associated ecosystems’ (*Madrid Protocol*), Antarctica is rightly designated as a ‘natural reserve, devoted to peace and science’. Even if the Treaty comes up for a review after 2048, it is hoped that the

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<sup>1</sup>William F. Warren (1885). *Paradise Found or the Cradle of the Human Race at the North Pole*.

<sup>2</sup>Bal Gangadhar Tilak (1903). *The Arctic Home in the Vedas*. Tilak Brothers, Gaikwarwada, Poona City.

Consultative Parties will not like to disturb the status quo so far as mineral exploitation is concerned. Declaration of nearly 1,548,813 km<sup>2</sup> of the sea area, as Ross Sea Marine Reserve in the Antarctic Circle recently, is a step in this direction. It is essential that we carry on this legacy for future generations. Thus, despite the fact that science is the 'only currency in Antarctica', perhaps role of the geopolitics is more important here. India should therefore be a proactive player in this field, too.

The Arctic presents a more alarming scenario due to excessive melting of ice and consequent opening of the new areas being thrown open for offshore natural resource exploitation. Most of the area in the Arctic Circle, right up to North Pole, has been claimed by the Arctic nations as their extended continental shelf. Though many of the claims are overlapping, the Arctic states have decided not to contest the conflict before the UN Commission on Limits of Continental Shelf. Moreover, the dwindling sea ice has opened new sea routes in Arctic, making navigation in so far inaccessible area, an easy and economical proposition. This will pave an easy way for bilateral or multilateral cooperation in the resource exploration and profit sharing in the area, posing a serious environmental situation.

Arctic and Antarctic are gaining international limelight in the field of tourism. This might seem contradictory, as on the one hand we are talking of preserving the delicate ecosystem of these pristine areas while on the other hand nobody wants to put a stop to visits of tourists. Since tourism has come to stay as a tool of education and raising environmental awareness, and also because many advanced nations are promoting their tourism industries, the 30th ATCM held in New Delhi in 2007 had suggested a 'Regulated Tourism' policy to be adopted wherein number of tourists and their ships could be kept under control. Fortunately, tourism in Antarctica is now very well controlled with an eye on avoiding the introduction of non-native species in its environment.

The three polar regions of Earth—Arctic, Antarctic and Himalaya (as the Third Pole)—also raise an important viewpoint of competitive nationalism vis-a-vis cooperative internationalism. The competitive nationalism, for example, can be described as keeping pace with others or even surpassing them in various spheres of national importance such as raising infrastructure for development, which is a healthy competition. The cooperative internationalism, on the other hand, is joining hands with global community in advancing common goals such as in the areas of human well-being and creating environmental reserves. The scope of latter is far beyond the competitive nationalism as it reduces the global burden and brings humanity closer.

The Himalaya—long considered as a crown of India—constitutes an integral part of every aspect of our life and survival—be it history, culture, agriculture, religion or trade and commerce. Apart from India, this mountain belt encompasses areas under sovereign control of Afghanistan, Bhutan, China, Nepal and Pakistan supporting 1.4 billion people in one of the most densely populated regions of the world (including Bangladesh and Myanmar). The Himalayan glaciers are the sources of several perennial rivers and its high orography controls monsoon rainfall, which is the lifeline of agriculture in this part of the world.

Being geologically a part of dynamic earth system, the regions in Himalaya experience maximum natural hazards such as earthquakes, landslides, avalanches, cloud bursts and glacial lake outbursts. There have been huge losses of life and property. Any major earthquake in the modern times in this region, like the one in Nepal recently, may create havoc with huge loss of life and property due to high population density and rapidly developing infrastructure.

The magnitude of the problem and geographical spread in Himalaya is so great that no single stakeholder can do justice to the subject of such great relevance to the indigenous people inhabiting the inaccessible and inhospitable area, cutting across the geographic borders. In no other region are science and geopolitics so closely entwined as in Himalaya. It is therefore of prime importance that the Himalayan States gain from the successful experience of Arctic States and organize themselves such as Arctic Council and come up with a coordinated plan of Himalayan region development.

The present volume, which is a compilation of 13 papers mainly presented at the SaGAA-III (International Seminar on Science and Geopolitics of Arctic-Antarctic-Himalaya) held at New Delhi on 29–30 September 2015, was a continued attempt, third in succession, by LIGHTS Research Foundation on such a unique subject. The papers cover most of the issues raised in preceding paragraphs and present contemporary analyses of the three polar regions, their scientific issues and geopolitical scenario. We thank the distinguished contributors for their scholarly work.

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