Editorial

I have returned from the KIMS hospital on 8th September, after undergoing treatment for STROKE for 6 days starting from 2nd September. Fortunately, due to God`s grace, prayers of my family, friends and well wishers I could regain my voice, and minor setbacks.

I have learnt from this setback----- No matter how intelligent and rich you are, you cannot transport yourself to the future or the past. You have to be present, awake and happy now. If you believe that time has passed you by, your best days are behind you, or that somehow you've failed too many times to have another chance, nothing could be further from the truth. Indecision often blurs your vision making you to fail to focus. As many learned have propagated one should not leave a decision for tomorrow that needs to be made today. You can do everything you ought to do once you make a decision. I have decided to serve JIGU, until my physical and mental faculties permit and the readers want me to contribute. I will not continue once any of the first two fail and the third find me unsuitable.

An interesting topic is covered below, as part of the editorial.

The Anthropocene:

The Anthropocene concept is "stratigraphically real" and "potentially a valid chronostratigraphic unit," according to working group members. AWG secretary Colin Waters presented the assessment during a session at the International Geological Congress (IGC) in Cape Town, South Africa.

In his presentation, Waters noted that as a preliminary step, 30 out of 35 AWG members favored formalizing the Anthropocene in a recent nonbinding vote. A majority voted in favor of designating the Anthropocene as an "**epoch/series**," according to the working group, which would mean that the current Holocene epoch, which began about 11,700 years ago, has terminated. Anthropocene Working Group members recently voted to pin the start of the Anthropocene in the 1950s, when atmospheric nuclear bomb blasts deposited radioactive plutonium in sediment layers. (Source: Showstack, R. (2016), Scientific study group favors recognizing human-influenced epoch, Eos, 97, doi: 10.1029/2016EO058567).

This is a major scientific decision, as present day Man`s contribution is significantly evident in obliterating number of species with his overambitious self destructing "developmental programs". While this decision been taken, some new findings have come up with specific findings.

Two recent papers in *Earth's Future* examine the meaning and formalization of an Anthropocene Epoch, a geological era in which humans have a major impact on surface processes and the environment. *Steffen et al.* [2016] take an Earth systems approach while *Williams et al.* [2016] focus on biospheric signals. Both papers are informative and data-based and should become required reading for anyone interested in the proposed change to Earth's geologic timescale and, especially, modern global change. The field of stratigraphy is explicitly recognized in each analysis, as it provides the foundation of the Geologic Timescale.

A quick primer on stratigraphy: for the past 2.5 million years, we have lived in the Cenozoic Era's Quaternary Period, which started with the Pleistocene Epoch and, currently, the Holocene Epoch. The addition of an Anthropocene Epoch into the geological time scale is a key motivation behind these papers, which will be decided by the International Commission on Stratigraphy, supported by an Anthropocene Working Group that includes the leads and several authors of these two papers.

Steffen and colleagues use Earth systems science to describe our planet's evolution from an evolving Precambrian environment into a life-dominated Phanerozoic one (since ~540Ma). They conclude that today's Earth system has undergone a substantial transition away from the Holocene (interglacial) state, toward a world with much less polar ice, changed atmospheric composition, and accelerated plant and animal species extinction. Williams and colleagues' biotic approach emphasizes that modern humans are changing our relationship with the planet through human consumption of Earth's resources, with major consequences for the ecosphere and a change in evolutionary state. Using different perspectives, both papers reach the same conclusion of an Anthropocene state that is unlike the Holocene, supporting the need for a new epoch. Both also favor a chemical tracer from mid-20thC nuclear activity as

its lower timescale boundary, though that seems less compelling from their descriptions.

The stratigraphic foundation of the Phanerozoic Eon's geologic timescale is the preservation of hard-bodied life. Extinctions, a relatively sudden, large decline of species, punctuate the record with five major events (excluding today) and multiple smaller events, providing global markers for stratigraphic boundaries in the geologic record. Some extinctions were relatively fast (thousands of years), while others reflect longer times (millions of years). The species extinction of modern time, which started with the rise of humans as the planet's dominant consumer of resources can likewise become the base of the Anthropocene. This latest (6^{th}) major extinction is already underway, and continuing for decades to centuries, perhaps even culminating in human extinction. Life, notably the radiation of species, offers another global stratigraphic marker in the tradition of the geologic timescale. Humans exploring and conquering the world transported other life, including plants and seeds, small animals (like insects and rodents), and even large animals (like horses) that since became entrained as fossils in modern depositional strata. This biomarker would place the start of the Anthropocene well before the 20^{th}century, as far back as 15^{th} century, following Medieval times. Arguably, the current 6^{th} extinction also started around that time. Unlike the Holocene, which started ~12,000 years ago as a garden-variety interglacial, the Anthropocene involves vast and fast changes on a global scale, involving life, atmosphere, land, and oceans. This pattern is not a mere extension or acceleration of the Holocene interglacial. The Anthropocene signature is unlike that of our planet's icehouse-greenhouse system, leading to my earlier suggestion in *van der Pluijm* [2014] to adopt a Pleistocene-Anthropocene boundary that reflects this fundamental change in Earth system from an externally-driven Milankovitch state to a human-driven state. As we move toward a decision, these authors contribute to the compelling case for an Anthropocene Epoch, while reminding us of the environmental state change that is underway.

(**Source**: Ben van der Pluijm, Editor-in-Chief, *Earth's Future*; email: efbvdp@gmail.com**).**

Even though the impact of 1950s series of nuclear explosions on the earth`s environment was significant, to categorically state that the suggested Anthropocene supports the theory that 11,700 year back started Holocene epoch got terminated is rather difficult to digest. Even though an Epoch is defined as "a division of time that is a subdivision of a period and is itself subdivided into ages, corresponding to a series in chronostratigraphy" to pin point the onset of Anthropocene epoch was started in 1950s is difficult. It is true that Man has devastated our environment and the devastation started with large scale introduction of chemicals in every walk of our life and over exploitation of our non renewable natural resources. In spite of this one cannot categorically state that the man made destruction is comparable to series of naturally induced evolutionary processes. Before coining this biomarker at par with significant evolutionary changes let the learned debate it in a detailed way and introduce a more viable alternative. Otherwise we will be only opening a new scientific issue for scientific debates and nothing else. I do agree with Ben Van der Pluijm`s suggestion "to adopt a Pleistocene-Anthropocene boundary that reflects this fundamental change in Earth system from an externally-driven Milankovitch state to a human-driven state".

In this issue:

This issue contains 9 research articles, News at a glance, one research note cum opinion and a scientific convention circular.

I thank all those who have extended support to JIGU. I do wish from 2017 a new era begins with due recognition from Thomson Reuters

P.R.Reddy