

## SHEREE BEGA

CHICKEN bones stacked in landfills, ubiquitous microplastic, erosion, widespread fertiliser use, ash from the burning of fossil fuels, radioactive particles from nuclear waste and the effects of unfolding climate change.

When our descendants study fossilised records buried in rocks and in soil, this is likely to be the evidence signalling the dawn of the age in which humanity dominated the earth.

This week, members of the

# Geological summit set to announce the epoch of humanity

Anthropocene working group announced at the 35th International Geological Congress in Cape Town that the beginning of a new epoch, or geological era – the Anthropocene – should provisionally be declared because man-made influences on the “state, dynamics and future of the earth system” are as significant as those that happened nearly 12 000 years ago, at the

conclusion of the last Ice Age.

Dr Matthys Dippenaar, a geologist in the University of Pretoria’s Geology department, said the announcement was “very exciting and we are very privileged that it happened in South Africa”. Dippenaar and his colleague, Louis van Rooy, said the geological timescale is subdivided, based on major climatic ice ages, evolutionary (the Cambrian explosion

of biodiversity) or deposition environments shaping the planet and its biodiversity, as well as major extinction events such as the Permian-Triassic boundary.

“To announce the Anthropocene as a new epoch dating from the 1950s implies geologists have decided that we have definitely entered a new time in the geological timescale, which can be distinguished

from others preceding it,” they said.

“Man’s impact is now considered one that will be reflected in the geological record of rocks and soils in the geological future. The Anthropocene can be characterised by changes in how sediments are deposited, how we disrupt the Earth’s subsurface, and what the chemical nature of these deposits are. The term

does not intrinsically imply any adverse impacts induced on the planet, but rather the indistinguishable reflection of man’s influence on the changing geological processes shaping the planet.”

The relevance of this is that it provides a new chronostratigraphic, or the time-based sequencing and classification of earth materials, basis for placing the influence

of humankind into context of the shaping of the planet, “not necessarily now, but in the short geological or long-term anthropological future”.

“Our deep excavations, our man-made construction materials, our use of nuclear energy and our carbon footprint are now part of how the future’s rocks are being formed,” they said.

The term was first coined

in 2000 “to denote the present time interval, in which many geologically significant conditions and processes are profoundly altered by human activities”.

These include changes in: erosion and sediment transport associated with a number of anthropogenic processes, such as colonisation, urbanisation and climate change; the chemical composition of the atmosphere with significant anthropogenic perturbations of the cycles of elements such as carbon, nitrogen, phosphorus and various metals.