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The age of the Antropocene

- Reviews section -

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This book is a very good introduction to a very big subject that has only been on the radar for a decade and a half and has only become familiar to many of those involved in ecology and climate change in the last few years. It is not an easy read, particularly for those of us without scientific qualifications or familiarity with such terminology. It is, however, well worth the effort.

It tackles an issue that is literally epic: whether (or not), as a result of the impact of modern humans (homo sapiens) on the planet and its biosphere, the current geological epochâEuros"the Holocene (or interglacial period)âEuros"should be superseded by, or redefined as, the Anthropocene, or the âEurosÜage of humans'. This would involve a change to the official geological time scale, which, as the book explains, is the chart that divides the Earth's 4.5bn year history into eons, eras, periods, epochs and ages, with each division of diminishing length and geological significance.

The Holocene is the geological epoch that began with the end of the last ice age 12,000 years ago. It settled down to a global average surface temperature (on land) that remained largely constant until (Anthropogenic) global warming began to set in after the industrial revolution at the end of the 18th century.

It would be the first time a geological epoch had been determine by the impact of a single species on the planet rather than by its main flora or fauna composition, or by geophysical events.

The book starts with a very useful (and weighty) first chapter by the three editorsâEuros"Thinking the AnthropoceneâEuros"that summarises the issues in the book. This is followed by a dozen essays, by writers from various disciplines and persuasions, which give a good flavour of the current debate on the subject.

The origins of the proposition

Changing the definition of the geological epoch to the Anthropocene was first proposed by Paul Crutzen, a climate scientist and a Nobel Prize winner, in 2000. Since then scientific opinion has increasingly supported his thesis.

A decision on such a change (or otherwise) is expected in the next few years, possibly by the end of 2017. It will be taken by the International Commission on Stratigraphy; the scientific body charged with setting and regulating the geological time scale. Before the commission takes its decision, however, it will receive a recommendation from its Anthropogenic Working Group set up in 2008âEuros"which will be influential as to the final outcome.

The recommendation the Anthropogenic Working Group makes (the editors argue) is likely to be influenced by how widely or narrowly the commission interprets its brief. If they take the narrowest view and simply study the rock strata and sediments, then a recommendation for change would seem unlikely. If it takes a broader brief, to include the totality of human impact on the planet its biosphere and its ecosystems, then a positive recommendation looks a more likely outcome.

It is important, in my view, that their approach should include a range of issues from historic landscape transformation, deforestation, and species and habitat destruction, to the impact of the industrial revolution. It should

include fossil fuel burning, industrial production and growth, pollution, population growth and urbanisation, as well industrialised agriculture and meat production and much moreâEuros"in other words the totality of the relationship between modern humans and nature.

The sixth great extinction

The biggest single issue arising in this and the most compelling factor for the Anthropocene, in my view, is the biodiversity crisis. The editors also give it central importance.

In her excellent book The Sixth Extinction Elizabeth Kolbert argues (along with an increasing body of opinion) that we are facing the biggest mass extinction of species (the "sixth mass extinction") since the demise of the dinosaurs 65m years ago. She also argues strongly for a recognition of the Anthropocene and predicts an early decision on it. My review of her book can be found here.

She points out that from global warming alone, between 38% and 52% of all species are likely to disappear. She points out that 40% of all mammal species are currently under a short to medium term threat of extinction against a background rate of one every 700 years. Amphibians (that are particularly sensitive to pollution and habitat loss) are disappearing at staggering 45,000 times the background rate. She argues that an extinction rate of this scale ultimately puts at risk all species on the planet, including, eventually, our own.

Making the change

The editors argue that the most convincing case for the Anthropocene, is made by scientists of Earth System Sciences, which include climatology, global ecology, geochemistry, atmospheric chemistry, oceanography, and geology.

They put it this way: "With its wider lens, Earth Systems Science claims that the earth as a system is experiencing a shift, leaving behind its Holocene state, characterised by several millennia of exceptionally stable temperatures and sea levels, to enter a new Anthropocene state with far reaching impacts. In this definition, as noted by Jan Zalasiewicz, chair of the Anthropocene Working Group, âEurosÜthe Anthropocene is not about being able to detect human influence in stratigraphy, but reflects a change in the Earth system"'. In other words the impact human activity is having on the biosphere.

A point of controversy amongst scientists who advocate the Anthropocene, the editors point out, is its starting date. Some argue that it began with the development of agriculture around 7,000 or 8,000 years ago. Crutzen dated it as the beginning of the industrial revolution, at the end of the 18th century. Others argue that it should be dated much later (around 1945) when the âEurosÜgreat acceleration' in terms of the impact on the ecosystems took place.

Some even argue that rather than entering a new epoch we are entering a new era, the Anthropozonic, which would succeed the Cenozonic era, which arose with the extinction of the dinosaurs 65 million years ago. It is now in the hands of the scientific community to reach a consensus on this and move towards a decision.

All this matters not just because it is important that the geological epoch is correctly defined from a scientific point of view but because of the messages the definition sends out and the way it shapes not just our views on the scope and

depth of the crisis but what we need to do about it.

A controversial issue

Despite the overwhelming logic of the Anthropocene (as it seems to me) it is none-the-less controversial on the left. In fact the Anthropocene (or not) has become an issue in current debates around the ecological crisis. Some on the left argue that it is not human beings, as such, that are causing the ecological crisis but the capitalism system. If a new epoch is to be declared, they argue, it should be defined as 'the age of capitalism' orâEuros"the Capitalocene as it is sometimes termed.

A paper referenced in the book as reflecting this position (in chapter 2 page 21) is by Andreas Malm and Alf Hornborg: The geology of mankind? A Critique of the Anthropocene Narrative, published in the Anthropocene Review

We can all, of course, as socialists, or ecosocialists, agree that capitalism with its drive for profit and growth is a totally destructive system as far as the environment is concerned. The impact of modern humans on the environment and on other species, however, began long before capitalism arrived on the scene. Whenever we put the starting date of the AnthropoceneâEuros"the industrial revolution for exampleâEuros"it would represent the culmination of a process that began a long time before.

As I argued in my article on the biodiversity crisis and the environmentalist left:

[Modern humans are the most, successful, resourceful, and effective species the planet has produced, and they had a disproportionate impact on other species from the outset. As humans migrated out from their African homelands to other parts of the globe they eliminated most of the big land animals and flightless birds, who were defenseless against their hunting skills, on the spotâEuros"often going far beyond their immediate needs. A fifth of all species were eliminated in this way. This was the case in Australia, New Zealand Madagascar, Indonesia, the Americas and Europe. [1]

Recent developments

Ian Angus, on the other hand, takes a different view (and one I agree with) in an article on his Climate and Capitalism site on January 9 2016 entitled: âEurosÜAnthropocene Working Group: Yes, a new epoch has begun'.

He not only endorses the concept of the anthropocene but he brings us up to date in regard to the work of the Anthropogenic Working Group since this bookâEuros"The Anthropocene and the Global Environmental CrisisâEuros"was published.

He reports that the Anthropogenic Working Group (AWG) plans to present its conclusions at the conference of the International Union of Geological Sciences in South Africa, this coming August (2016). This month, he says, two-thirds of the members of the AWG published their strongest statement to date on the issue The title of their paper, which summarises their recent research, and was published in Science magazine on January 8 2016, he says, is unequivocal: "The Anthropocene is functionally and stratigraphically distinct from the Holocene."

One of the reasons listed by the AWG in its report, as the basis for its conclusions, is particularly important in my

view. It concerns the issue of biodiversity and the sixth extinction. It says the following: "Species extinction rates are far above normal background rates. If current trends of habitat loss and overexploitation continue, 75 percent species could die out in the next few centuries. This would be the Earth's sixth mass extinction event, equivalent to the extinction of the dinosaurs, 65 million years ago".

Ian Angus sums up these new developments in the following way:

"There is still a strong possibility that the generally conservative geological community will reject or decide to defer any decision on adding the Anthropocene to the geological time scale, but as the AWG majority wrote a year ago, "the Anthropocene already has a robust geological basis, is in widespread use, and indeed is becoming a central, integrating concept in the consideration of global change.

In other words, a failure to win a formal vote will not make the Anthropocene go away."

This is true. To declare the Anthropocene, however, would have political, philosophical, and social, as well as scientific implications. It would officially recognise that modern humans are the driving force behind a fundamental change to the character of the planet on which we live. It also has implications as far as an understanding of the full depth and character of the ecological crisis and its anthropological driving force.

It would also be a declaration, at least in part, that human beings are a part of nature and have both a need and an obligation to live in harmony with it. As ecosocialists we should strive for a society in which humankind can exist alongside other species without threatening their very existence.

Meanwhile The Anthropocene and the Global Environmental Crisis has made an important contribution in taking these issues beyond the scientific community and making them accessible to a wider ecological audience.

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[1] http://socialistresistance.org/7410...