



The Anthropocene: an update

The Anthropocene Working Group provides an update on the discussions on formalising the Anthropocene as a geological epoch.

Study of, and interest in, the Anthropocene – the concept that humans have changed the geology of the Earth sufficiently to mean that a new epoch of planetary history has begun – has grown exponentially since the term was introduced at the beginning of this millennium (Crutzen & Stoermer 2000; Crutzen 2002). Interest in the concept has been wide-ranging, and distributed amongst the humanities, social sciences, and the Earth and natural sciences.

One specific aspect of research is the formal examination of the term to determine whether it might be formalised, and become a part of the Geological Time Scale. This followed initial analysis by the Stratigraphy Commission of the Geological Society of London, in which the potential of the term for formalisation was explored (Zalasiewicz et al. 2008), and the subsequent setting up, the following year, of an Anthropocene Working Group (AWG) of the Subcommittee on Quaternary Stratigraphy, itself a component part of the International Commission on Stratigraphy. The AWG has no power of decision-making (that is the prerogative of the higher bodies in the formal hierarchy) but has the opportunity to examine the evidence both for and against potential formalisation.

The AWG includes both Earth scientists and representatives of a wider array of disciplines, as the analysis involves examining evidence of contemporary global change and, in effect, translating these into geological, and more specifically stratigraphic, terms. Thus, physical changes to the Earth surfaces may be interpreted in terms of lithostratigraphy, biotic change as biostratigraphy, anthropogenic chemical changes as chemostratigraphy, and so on. The work of the AWG is published in scientific papers, with two major volumes produced to date (Williams et al. 2011; Waters et al. 2014). A summary volume of evidence, together with recommendations, is projected for 2016, to approximately coincide with the next [International Geological Congress](#).

This represents an ambitious schedule for a problem that is arguably more complex than that represented by elapsed geological time intervals (where formal assessment can take several decades). This is because of the level of interdisciplinarity study required, the diverse nature of the evidence and, not least, because the Anthropocene is clearly in its very early stages: its ultimate 'full' development and duration cannot yet be determined. Nevertheless, it is hoped that a reasonable, if interim, assessment can be made.

The AWG met for the first time in October of this year in Berlin, kindly hosted (and made possible) by the city's Haus der Kulturen der Welt. Seventeen of the then 35 (now 37) members of the AWG present debated the major issues that surround the Anthropocene, notably its geological reality, its definition (how it should be characterised and when it should be held to begin), its suitability for

formalisation, and the outline of further work on this topic. In brief, the outcome of the meeting was:

- There was universal agreement among the attending members that the most fundamental aspect of the Anthropocene – that humans have altered geologic processes across the Earth system sufficiently to cause a planetary transition to a new period of geological time – is clearly a real event within a deep-time context, and is producing geologic signatures.
- All attending members agreed that for the above reason, the formal recognition of the Anthropocene as an interval of geologic time is useful, and should be pursued further towards an agreement for its formal recognition.
- At this point, the timing of onset of the Anthropocene has not been formally recognised, though specific proposals to do so are emerging and gaining evidence. The main proposed levels have been an 'early Anthropocene' beginning, linked to the origin and spread of agriculture, thousands of years ago; a beginning coincident with that of the Industrial Revolution, in the late 18th century; and one coincident with the Great Acceleration (Steffen et al. 2007) of the mid-twentieth century. The last of these currently has most support within the group, and specific levels within this are currently being analysed (e.g. Zalasiewicz et al., in press), while alternatives are also being explored (Edgeworth et al., in submission).
- The AWG is continuing to collect evidence, and is planning for further collaborative work and workshops to develop a formal proposal to recognise the Anthropocene to be presented to the [International Geological Congress](#) in 2016.

The Anthropocene Working Group

Notes

Further information on the activities of the AWG is available online at: <http://quaternary.stratigraphy.org/workinggroups/anthropocene/>.

References

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