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**Sounding the Northern Seas**

**What Is the Anthropocene?**

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# The Enigma of Ophiolites



If the Anthropocene is to become a formal part of the Geologic Time Scale, a unique point in time must mark its beginning. Although it is tempting to examine at length the relative merits of various particular starting points, the real discussion should focus on a different question: Can any unique point in time coexist with current Anthropocene concepts and usage? In other words, does the Anthropocene have a beginning that is the same everywhere, or does it begin at different times in different places because it represents a holistic concept that involves time, place, human cultural attainment and dominance, and a variety of environmental effects [Edgeworth *et al.*, 2015; Ruddiman *et al.*, 2015]?

### Hierarchy

If the Anthropocene is to be incorporated into the Geologic Time Scale, the International Commission on Stratigraphy will have to deal with the question of rank. Each unit in the time scale has a rank. Eras are divided into periods, which are divided into epochs, which are divided into ages.

A quick search in the scientific and popular literature for the term “Anthropocene” reveals an obvious lack of consensus on its rank. Hundreds of citations refer to an Anthropocene era, an Anthropocene period, an Anthropocene epoch, and an Anthropocene age. In fact, the term “Anthropocene” is so widely employed that many users must be quite unaware of the formal rank terms of geologists.

Rank has consequences. If the rank of era is appropriate for the Anthropocene, the direct corollary is that the Cenozoic era, which began approximately 66 million years ago with the demise of the nonavian dinosaurs, has ended.

If the Anthropocene is a period, then the Quaternary period, which began approximately 2.6 million years ago at a time of major glacial–interglacial fluctuation, has ended. If it is an epoch, then the Holocene epoch, the interglacial (warm) interval that began 11,800 years ago, has ended. If it is an age, then it is the current age within the Holocene epoch.

These consequences extend far beyond the scientific community. For instance, many building codes have strict legal definitions of what constitutes a “Holocene fault.” If the Holocene epoch were to be over, perhaps a developer would try to build in an area of active ground movement because, technically, there is no Holocene fault. Or would “Holocene” have two meanings: one geological, one legal?

### Possible Outcomes

The International Commission on Stratigraphy has set a target date in 2016 for consideration of a proposal to formalize the Anthropocene. I see three possible outcomes:

- The word “Anthropocene” will be assigned a specific start time (which will not please everyone) and will be added to the formal Geologic Time Scale. In this case, the word “Anthropocene” will not have a 1:1 correspondence with any and all things anthropogenic. If the Anthropocene is assigned the rank of epoch, then the Holocene is over. Rigorously applied labels such as Holocene and Anthropocene will be used in all discussions of anthropogenic deposits or anthropogenic environmental effects that originate before the chosen start time.

- The word “Anthropocene” will be used in a cultural sense to indicate and call attention to the fact that humankind significantly influ-

ences the global environment. It will represent a holistic concept and may have different start times in different places in the world. It may depend on different features or environmental effects. Deposits of anthropogenic origin will be considered Anthropocene deposits. The Anthropocene can easily be depicted on the formal Geologic Time Scale but will not be a formal unit of it. Some people may consider the Anthropocene to be

an informal unit of geologic time. Others may not consider it a time unit at all.

- The word “Anthropocene” will be assigned a specific start time and placed on the formal Geologic Time Scale, but a significant proportion of its use would be in direct contradiction of the basic tenets of stratigraphic correlation and terminology. Many scientists will now say that it is acceptable to have an Anthropocene epoch that is openly acknowledged to vary in age from place to place. These scientists will include those who in the past have recognized that chronostratigraphic correlation (although never perfect) strives to recognize time equivalence. The term will be used by all but strict-constructionist stratigraphers in a variety of ways to mean different things to different people, most of them thinking that their way is formal and correct.

In the next year or so, the International Commission on Stratigraphy will make a decision, and the rest of us will have to live with it. Is the Anthropocene a specific subdivision in the continuum of time, or is it a holistic concept that includes time but is not defined by it? Which decision will serve us best?

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