

DEFINING THE HOLOCENE

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Last month, India received the happy news that one of the three newly designated geological ages of the Holocene Epoch was named after Meghalaya. The International Commission on Stratigraphy (ICS), a body of geological timekeepers, had divided the Holocene Epoch, which began 11,700 years ago, at the 8,200-year and 4,200-year points, thereby creating the Greenlandian, the Northgrippian and the Meghalayan Ages.

Even though the ICS decision took over a decade, it wasn't without its critics. Primary among them were geologists for whom the new Holocene subdivisions had undercut a proposal for a more important geological stratification: the Anthropocene Epoch. The idea that human influence on earth has heralded the beginning of the new geological epoch, bringing the Holocene to a close, was first proposed in the late 20th century. Later, Nobel laureate Paul Crutzen argued that the "Anthropocene Epoch" ought to begin at the start of the industrial revolution (1800 AD). This point in time could be marked, as geological epochs often are, by rising carbon dioxide levels in polar ice. But although the idea of an Anthropocene was widely accepted, their proposed start date was not.

Other researchers said that 8,000 years ago was a better starting point, when agriculture first began in Eurasia. Yet another group suggested 1610 AD, when the European colonisation of the Americas led to an unprecedented mixing of new-world and old-world species. A third contender was the mid-20th century, known as the Great Acceleration, when concrete, aluminium and plastic were disseminated across the planet. Given these disagreements over the Anthropocene start date, the epoch hasn't been formalised yet.

In the meantime, another set of researchers was working to stratify the Holocene Epoch. The reason was convenience: the Holocene was already being divided by researchers, informally, into the early, middle and late Holocene, but the lack of a formal definition was leading to confusion. Ultimately, they settled on a division based on two climatic events. The first, 8,200 years ago, was a catastrophic melting of glacial lakes resulting in a global drop in temperatures. The second, 4,200 years ago, was a massive drought around the planet's mid-latitudes, which is thought to have triggered the decline of civilisations such as the Akkadian and the Indus Valley.

Why the controversy, then? First, the 8,200-years-ago start date of the Northgrippian now coincides broadly with one of the Anthropocene start dates. Second, some researchers argue that the drought 4,200 years ago wasn't global. This has riled researchers who were awaiting clarity on the Anthropocene debate. Why chop up the Holocene along arbitrary lines when it isn't even clear if we are living in the Holocene now, they ask. Even though the ICS's stratification is now official, this debate is likely to continue for a while.

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