



Photo of Ableman's Gorge, Sauk County Historical Society
(www.saukcountyhistory.org/areaattractions/ablemansgorge.html)

RESTORING THE PSYCHOZOIC ERA, REPLACING THE ANTHROPOCENE

By Paul H. Zedler

My awareness of the Psychozoic began with a cryptic email from a colleague, Ed Johnson, UW grad and distinguished ecologist at the University of Calgary—"I am sending you a book." It was a 752 page antique volume: the *Geology of Wisconsin, Volume I, 1873-1879*, published by the Commissioners of Public Printing and dated 1883. The editor was Thomas Crowder Chamberlin, then the Chief Geologist of Wisconsin. The volume has 33 chapters by nine authors. It deals with bedrock and glacial geology, fossils, applied and theoretical mineralogy, and aspects of natural history. (The author of the chapter on birds is F. H. King, known best for his work in agricultural soils and the namesake of King Hall, the soils building at UW-Madison.) Chamberlin was the chief author of the chapters on geology. Most of what is in these is still applicable, reminding us of how far the careful work of our predecessors had brought them despite their lack of word processors and the internet. But it is the two-page chapter authored by Chamberlin titled "The Psychozoic Era" (pp. 299-300) that most obviously demonstrates that what is "new" about some concepts is the name, not the substance.

Before going into this substance, I want to establish who Chamberlin was. I first knew of him as the author of the concept of "multiple working hypotheses", a doctrine still discussed, that argued against the habit of scientists to become too attached to a favored hypothesis. But that is almost a trivial example of his many contributions to geology and to higher education. An excellent summary of his career is available on the web in a paper in *GSA Today* by emeritus UW professor of geology, Robert Dott (<http://www.geosociety.org/gsatoday/archive/16/10/pdf/i1052-5173-16-10-30.pdf>). In brief, Chamberlin was educated at Beloit College, took a position there, detoured to the University of Michigan for a Ph. D, returned to

Wisconsin and became Chief Geologist for the state. He became the president of the University of Wisconsin, serving from 1887-1892. (Chamberlin Hall on the UW campus was named for him.) As Dott relates, Chamberlin was "tiring of administration" (a condition not unknown today) and so moved to the University of Chicago to have time for his research and to form a new Department of Geology. He retired from there in 1918.

So what was the message of Chamberlin's Psychozoic essay, and what is its relevance today? It was not new, even in 1883, to recognize the extent of human domination of the earth. This topic was in the air in late 19th century. Most notably, George Perkins Marsh had authored two versions of a remarkable book, the 1874 version of which was titled *The Earth as Modified by Human Action*. In this extensive and footnote-rich book, Marsh laid out the many ways that humans had had adverse impacts on nature. Though understandably sometimes off the mark in ecological detail, Marsh's general message resonates with even more force today—humans were everywhere modifying the earth and it was urgent that they be more thoughtful about how they went about it.

What *was* new was Chamberlin's argument that human domination of the earth had brought us into a new *geological* era—an era that deserved recognition not because humans were numerous or had invented grand opera and the stock exchange, but because they had significantly and demonstrably altered geological processes. A decade and a half before Frederick Jackson Turner declared the American frontier closed, Chamberlin was asserting that the "era of man", to use the discredited 19th century formula, was in full swing. He opens the essay with these words: "The propriety of recognizing the present as a Psychozoic era, distinct from the Cenozoic, has not been universally recognized, and perhaps the basis on which the era

has been founded has not been altogether that urged here.” That is, others had said that we had entered a new era, but had not considered that human actions were fundamentally changing how earth processes functioned in ways that should attract the attention of geologists. Chamberlin’s coinage of Psychozoic put this new era in parallel with the other eras of the geological time scale – the Paleozoic, Mesozoic, and Cenozoic. According to Dott, Chamberlin was anything but intellectually frivolous, and his Psychozoic essay confirms that assessment. He wrote: “The recognition of the Psychozoic era is here maintained as an important one, *on a strictly geological basis*, for it is contended, in opposition to the high authority of Lyell and others, that man is the most important organic agency yet introduced into geological history.” (Italics are Chamberlin’s.) In light of recent understanding, we might quibble about “most important”. Some of us would say that the microorganisms that created the oxygenated atmosphere brought about a more fundamental change to the earth’s systems, but that is a minor disagreement.



T. C. Chamberlin. USGS image (<http://hugefoods.com/LakeMissoula.html>)

He understood that human influence would not diminish: “The entire land life is being revolutionized by man’s agency and to a very considerable extent, that of the waters. ...That he will ultimately modify to a considerable degree marine life, scarcely admits of question.” As to the aptness of the specific term “Psychozoic”, Chamberlin notes “The fact that [his] influence springs from man’s intellectuality, more than from his animal force, renders the term Psychozoic a fitting one.” That is, humans had expanded to just about every habitable part of the earth and were the most abundant large ape well before they began to fundamentally change the biosphere. We killed off a few lumbering megafauna and extended (but did not create) grasslands by burning. By analogy, humans redecorated, but did not add much in the way of new rooms until they were able to accomplish work by means more effective than human muscle plus fire, sharpened stone, and the odd lever (such as the atlatl).

As to “cene” versus “zoic”: Chamberlin chose to make the new time unit an era, not a mere epoch.

Since the other eras are based on changes in the dominant life forms (or their complete absence), our all pervasive presence, increasingly powerful machines, and cumulative—mostly negative—influences more than justify the choice of era over epoch.

And then there is the parochial interest. Though Chamberlin abandoned Wisconsin for the University of Chicago, we may rightly claim him. The final paragraph of his essay makes the connection explicit: “In Wisconsin, the potent influences of this new era have only been felt within the memory of our oldest citizens. It may safely be asserted that the present generation has witnessed greater changes in the surface, in the vegetation, and in the animal life, than ever before took place in an equal length of time, since the dawn of authentic geological history, excepting possibly certain stages of the glacial period. This is the physical work of an intellectual agency. *This is the geology of the living present.*” (Italics Chamberlin’s.)

So, there are good general reasons for rejecting Anthropocene in favor of Psychozoic. First is that Psychozoic has priority, and adopting it would honor the prescient contributions of our scientific predecessors. Second is that the vogue for Anthropocene feeds the erroneous belief that the pervasive effect of humans is a recent discovery. It is not. Third, choosing to make it an era to follow the Cenozoic more appropriately upgrades our dominant role. And finally, Chamberlin was an example of the best that the Midwest, and most specifically Wisconsin, could produce. He deserves recognition.

The conclusion: the use of Anthropocene should be abandoned in favor of Psychozoic.

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