

not. The Class Mammalia would be redefined as a polyphyletic group, with some mammals arising in the Precambrian and the rest in the early Mesozoic.

She also re-exhumes Dobzhansky’s self-serving wisecrack that “Nothing in biology makes sense except in the light of evolution.” Tell that to Linnaeus, who, while disbelieving evolution and accepting Special Creation, invented the system of classification still used by biologists today. Then tell it to evolution-disbeliever and creationist Gregor Mendel, who discovered the laws of genetics. And so on.

We are, once again, assured that Genesis makes God out to be a deceiver. Either that, or Genesis is an ‘offensive dumbing down’ (to whom?) of the Creation. Then again, this only goes on to show the abject shallowness and rigidity in the thinking of this author.

Conclusion

This book has very little new to offer. It is a rehash of old evolutionistic and uniformitarian shibboleths, with little evidence of any kind of substantial understanding of the creationist position. The author’s undisguised hostility to creationist usage of her scientific findings alone discredits her as a serious author.

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The Missoula Flood—analogue for the greatest flood of all

Bretz’s Flood: The remarkable story of a rebel geologist and the world’s greatest flood

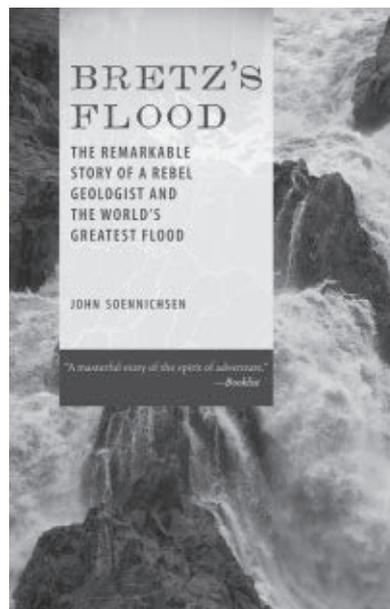
John Soennichsen
Sasquatch Books, 2009

Edward Isaacs

Harlen Bretz and his research in Washington State’s Channeled Scablands have become one of the most remarkable stories in science—one of how “personalities, pride, and outright prejudice superseded scientific evidence”.¹ Though told innumerable times over the past half century, few tell this story so clearly as John Soennichsen in his book *Bretz’s Flood*. Through a fascinating examination of Bretz’s life, Soennichsen clearly depicts Bretz’s remarkable journey from the origination of his “outrageous hypothesis” to its vindication.

Bretz the atheist

Born in the late nineteenth century, Bretz was raised in a Christian home. However, Bretz observed much Christian hypocrisy such as false “faith healers” (pp. 8–9). Bretz was drawn to the sciences, and although Bretz’s father was similarly interested



in science, Bretz saw the pursuit of scientific inquiry passively discouraged in his home.² These influences helped push the young Bretz to become an atheist “nature lover and worshipper” (p. 12) and “a rebel against the uncritical acceptance of Christian mysticism and mythology” (p. 10). This belief would be reinforced throughout his life through interactions with students who were unprepared “to make a defense to anyone who asks you for a reason for the hope that is in you” (1 Peter 3:15). Nonetheless, Christianity had a lasting impact on him.³



Figure 1. A panoramic view of Dry Falls. During the Missoula Flood, huge torrents cascading over 100 m off the falls eroded gigantic plunge pools and left erosional remnants (middle right), while floodwater above planed the adjacent regions.

The outrageous hypothesis

Bretz developed an interest in the Scablands as early as 1909 but did not start his lifelong research there for another decade. After meticulous observations of the region and its deep coulees (box-shaped canyons), towering cataracts, oversized plunge pools, and regional-sized braided streambeds, Bretz concluded that catastrophic stream erosion formed the Scablands (figure 1). Yet, few were willing to accept his conclusions. Calling for the use of ‘established’ geologic processes to explain the Scablands, Bretz’s critics proposed many hypotheses to contradict his catastrophism, even stating that Bretz’s flood was too biblical in scale.^{4,5} It took a new generation of geologists for Bretz’s work to be accepted, and in 1979 Bretz was awarded the prestigious Penrose Medal after enduring over 40 years of rejection.

Chronology of the Missoula Flood

What is now known as the Missoula Flood has been well researched, leading to a comprehensive chronology of events. Meltwater ponded behind an ice dam in Montana to form Glacial Lake Missoula. When the dam failed, a massive surge of water inundated the surrounding valleys, producing huge ripple marks and erosional structures formed by kolk.⁶ Upon exiting Rathdrum Prairie further downstream, the Missoula Flood emptied into Glacial Lake Columbia in present-day Eastern Washington before quickly overflowing its banks and flooding across the Columbia Plateau where the floodwater planed and scoured the basalt, carving several scabland tracts and depositing numerous gravel bars. Before entering the Quincy Basin, the Missoula Flood gouged coulees into the substrate, such as Grand Coulee, and left the large erosional remnants Umatilla Rock in Lower Grand Coulee and Steamboat Rock in Upper Grand

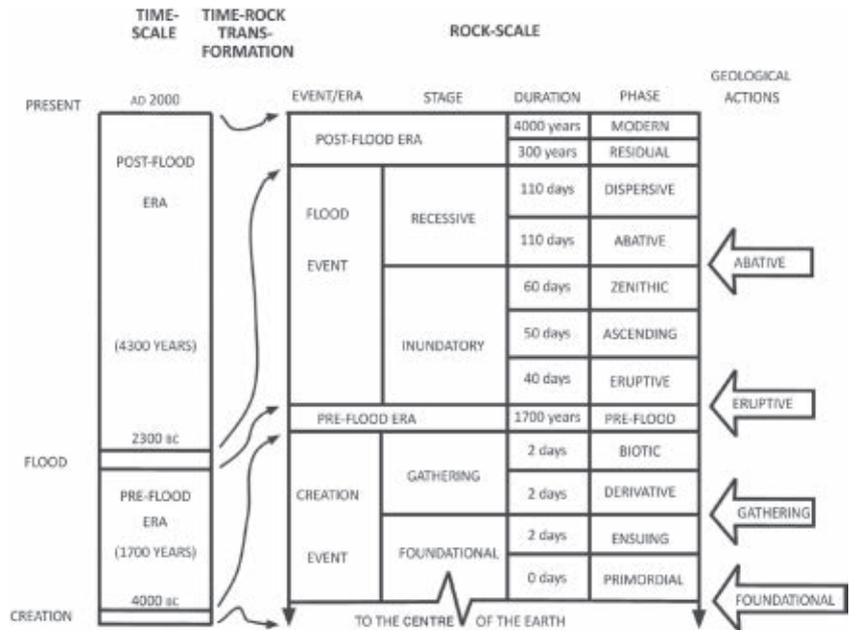


Figure 2. Walker’s updated diluvial timescale of Earth history. The Flood began with catastrophic erosion and deposition as the floodwaters inundated the continents (Inundatory Stage). Later tectonics commenced the Recessive Stage and caused catastrophic sheet flow to retrocede from the continents and form regional planation and erosional surfaces. Further runoff channelized to produce localized water gaps, erosional remnants, pediments, and terraces.

Coulee as well as the monumental Dry Falls (figure 1).

As the Missoula Flood issued into south-eastern Washington and carved the Cheney-Palouse Scabland tract, it overflowed and transected the southern border of Washtucna Coulee, rapidly breaching the ridge and forming Palouse Canyon and Devils Canyon. This floodwater streamed into Idaho’s Snake River, back-flooding several miles upstream and depositing gigantic gravel bars countercurrent to the present river. This branch rejoined the main torrent and briefly ponded at the Wallula Gap where it reached velocities nearing 130 km/h, bursting through the Columbia Gorge and producing terraces and boulder fields. Further west the floodwater eroded Beacon Rock, the remaining throat of an extinct volcano. Numerous hanging valleys were also produced, now containing the largest concentration of waterfalls in the United States, including Multnomah Falls.

As the Missoula Flood emptied through the Columbia River into the

Pacific Ocean, it back-flooded into the Willamette Valley where it deposited numerous erratic boulders⁷ and the enormous gravel deposits comprising the Portland Delta before finally draining into the Pacific Ocean.

How many Missoula floods?

Although Bretz originally hypothesized one Missoula flood, geologists today propose up to 100 such floods. Soennichsen noted that: “Current research has raised this total to forty, sixty, eighty—even a hundred floods or more” (p. 251). The multiple Missoula floods are based on an interpretation of rhythmites,⁸ usually presuming one rhythmite per flood. Bennito and O’Connor admit: “We *infer* that each sand and gravel couplet [rhythmite] was deposited during a single flood” (italics added).⁹ However, multiple rhythmites may be formed during a single flood, and the lack of cut-and-fill structures and angular unconformities in Walla Walla Valley rhythmites indicate a single gigantic Missoula

flood.^{10,11} Clastic dikes transecting the entire sequence of rhythmites exposed in Burlingame Canyon reinforces this interpretation.^{10,11} Some geologists are now returning to Bretz's original hypothesis of one gigantic Missoula flood.¹²

Soennichsen on diluvial geology

In examining Bretz's legacy, Soennichsen says:

"... another sort of theorizing has occurred ever since Bretz's theories first gained acceptance. Over the past few decades, in fact, Bretz has gained a whole new collection of allies composed of individuals with decidedly *unscientific* viewpoints. These are people who are elated to see catastrophism winning out over uniformitarianism. They are the proponents of creationism, people for whom Bretz has suddenly become a hero who—in their minds—single-handedly proved their case for the Great Flood in the Bible" (p. 260).

He further adds that:

"Dozens of creationist books, magazine, articles, and Web sites [*sic*] now portray Bretz as a champion who advanced the theory of creationism by refusing to bow down to his uniformitarian colleagues. But while the results of his findings may serve their purpose, nothing could be further from the truth than Bretz embracing catastrophism. ... Bretz was no poster boy for creationism" (p. 261).

Soennichsen shows himself to be a master of the strawman argument. First, he claims that the debate on diluvial geology is one of 'science vs religion', not discussing the philosophy underlying secular geology.^{13,14} Second, he falsely claims that diluvialists believe Bretz "proved their case for the Great Flood in the Bible".¹⁵

A broader perspective—the Ice Age

The Pleistocene Ice Age presents some of the greatest enigmas to secular

geology,¹⁶ such as the absence of a plausible mechanism.^{16–20} An ice age requires: 1) greater atmospheric moisture for increased snowfall; 2) cooler summers and reduced solar input; and 3) an extended period of these conditions for glaciation.¹⁶ Secular geology cannot explain these seemingly contradictory conditions because they are a natural consequence of the Genesis Flood.¹⁶ Following the Flood, temporarily elevated ocean temperatures fuelled profuse snowfall over the continents while the addition of aerosols to the atmosphere via subsiding volcanism reduced solar radiation, thereby cooling Earth's atmosphere.¹⁶ This condition would continue for centuries as the earth regained tectonic and volcanic equilibrium and the oceans cooled.¹⁶ Subsequent deglaciation produced numerous meltwater streams which often ponded behind ice dams from local glaciers. Many of these lakes were eventually released as large meltwater floods like the Missoula Flood.²¹

Missoula Flood—analogue for the greatest flood of all

Bretz's critics vehemently opposed the scale of the Missoula Flood. Soennichsen notes that the Scablands: "formed deep below the surface of the flood waters, sometimes hundreds of feet in depth" (p. 229). The immensity of the Missoula Flood makes it a local analogue of the cataclysmic erosional and depositional processes operating during the Genesis Flood. Walker's timescale²² (figure 2) depicts rapid erosion and sedimentation during the inundation of the continents (the Inundatory Stage), followed by catastrophic sheet flow concomitant to rising continents during the Recessive Stage producing regional-scale planation and erosional surfaces like those in the Teton Mountains (Wyoming) and the lower-elevation Colorado Plateau.²³ More localized run-off created water gaps, erosional remnants, pediments,²⁴ and terraces.^{23,25}

Conclusions

Soennichsen details the truly remarkable story of J Harlen Bretz, clearly depicting the life and work of this astounding man. However, Soennichsen dismisses the debate on diluvial geology as being one of 'science vs religion' and fails to observe the shortcomings of secular geology. Instead, the Missoula Flood is an excellent analogue for the Genesis Flood and provides insights into the erosional and depositional processes operating during the greatest Flood of all. Bretz's story also exemplifies the bias conventional geology holds against any event resembling the Genesis Flood, for they are indeed willingly ignorant.

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2. This is illustrated by Bretz's recollection of his grandfather and his position on science: "Why argue about scientific theories when the Bible contains all we need to know in order to get a pass to heaven?" (p. 8).
3. For example, even as a firmly committed atheist he would still recall familiar Bible verses upon occasion.
4. Alt, ref. 1, p. 17.
5. Oard, M.J., *The Missoula Flood Controversy and the Genesis Flood*, Creation Research Society Books, Chino Valley, AZ, p. 69, 2004.
6. A kolk is "a vortex with a near vertical axis that develops in high-energy flood flows and generates intense pressure gradients that can lift rock particles". Baker, V.R., The Channeled Scabland: a retrospective, *Annual Review of Earth and Planetary Sciences* 37:393–411, 2009.
7. An erratic is: "A rock fragment carried by glacial ice, deposited at some distance [often up to hundreds of km] from the outcrop from which it was derived, and generally resting on bedrock of different lithology." Bates, R.L. and Jackson, J. A., (Eds.), *Dictionary of Geological Terms*, 3rd edn, Anchor Press, New York, p. 170, 1984. Many erratic boulders in the Willamette Valley were glacially rafted on icebergs before being deposited during the Missoula Flood.
8. A rhythmite is an "individual unit of a rhythmic succession" resulting from: "The repetition, through a sedimentary succession, of a sequence of two or more rock units in a particular order and indicating a frequent and predictable recurrence of the same sequence of conditions. It may involve only two components (such as interbedded laminae of silt and clay)." Bates and Jackson, ref. 7, p. 432.
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A book about human errors that don't exist

Human Errors: A panorama of our glitches, from pointless bones to broken genes

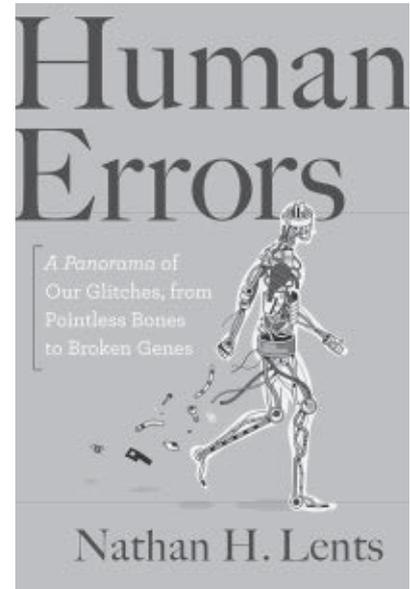
Nathan H. Lents

Houghton Mifflin Harcourt, Boston, MA, 2018

Jerry Bergman

It is the responsibility of an author to do basic research before writing a book. I have read few books with as many gross errors as this one, mostly in chapters 1, 3, and 4. Although entertaining and well-written, most of the examples in these three chapters are incorrect or not up to date. One example of many is the so-called placement of the retina photoreceptors called backward because they face away from the source of light instead of toward it (pp. 2–8). A major reason for this design, as has long been known to ophthalmologists,¹ is that both the rods and cones must physically interact with the retinal pigment epithelial (RPE) cells, which are located at the back of the eye. The RPE provides nutrients and oxygen to the retina cells, one of the most bioactive cell systems in the body.

The RPE also recycles photopigments and its opaque layer absorbs excess light. It is even essential in both the development and the normal function of the retina. The reverse would not work. Lents cites the octopus as an example of good design only because its photoreceptors face the front of the eye. In this case, the equivalent RPE system is located on each side of the rods and cones, not in the back of them as is true in



humans. The octopus system is less sensitive, but works because their vision is sensitive mostly to movement in a fairly dark underwater world. Lents is also evidently unaware how the arrangement allows the light to be filtered through a fibre optic plate comprising the Müller glial cells. This plate filters out stray light, increases image sharpness,² and separates the colours to optimize day vision without harming night vision.³

The recurrent laryngeal nerve

Another example Lents cites is the recurrent laryngeal nerve (p. 14) which he argues is much longer than required because, instead of travelling directly to the larynx, it loops around the aortic arch then travels back up to the larynx. The superior laryngeal nerve is not one nerve that has one function as implied by Lents and others, but has several functions. It divides into branches which control