Part VIII

North American Planation Surfaces

I have previously indicated that planation surfaces are very common across the earth. I will now proceed to show the reader that this is indeed the case in this and the subsequent part. This part will delve into the planation surfaces that I know best—those in North America. Part IX will briefly describe planation surfaces in other parts of the world. The point of this survey is to demonstrate the ubiquity of planation surfaces across the earth. Planation surfaces are not small, rare features, easily dismissed, but they are so common that they shout a message to us. They shout that despite the lip service paid to uniformitarianism by intellectuals, uniformitarianism is an arbitrary principle used to promote an arbitrary worldview against the facts. Based on the analog of the formation of small planation surfaces during floods adjacent to streams and rivers, planation surfaces (which are significantly smaller remnants today) provide powerful evidence for the Genesis Flood—worldwide.

Chapter 36

The Incredible Cypress Hills Planation Surface

Perhaps the most significant planation surface in North America is the remarkable Cypress Hills planation surface in southeast Alberta and southwest Saskatchewan, Canada. It lies a few thousand feet above the rivers that flank it to the north and south. It is significant because it is high, flat and capped by cobbles and boulders that were transported hundreds of miles from their source. The velocity of the transport of the quartzite cobbles and boulders points to a titanic flood event (see Chapter 14). The size, shape and gravel caps of planation surfaces present significant challenges for uniformitarian scientists.

Four Planation Surfaces at Different Altitudes

The Cypress Hills planation surface is located on the High Plains of southern Canada east of the Rocky Mountains. It represents the highest of four main planation surfaces on the High Plains of Canada and adjacent Montana. Each occupies different altitudes with respect to the Rocky Mountains to the west (Figure 36.1). They were formed during extensive erosion of the area. The sedimentary rock of the High Plains is predominantly horizontal. The erosional process left behind a veneer of well-rounded quartzite gravel (see Chapter 14 and Appendix 6).

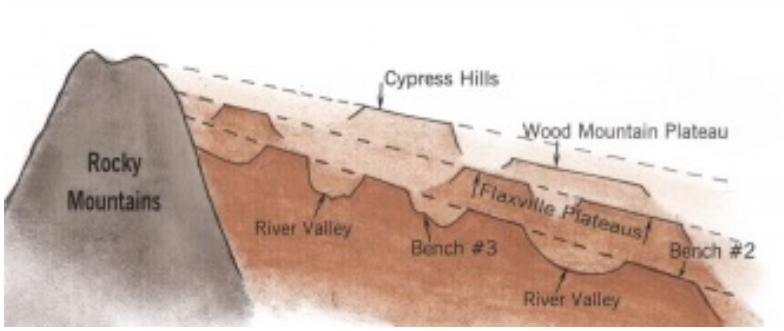

Figure 36.1. Distance/height diagram of Alden's benches from the Rocky Mountains (after Alden, 1932 and drawn by Mrs. Melanie Richard).

When William Alden examined these surfaces in the early twentieth century[1] he called them *benches*. Since he was working only in the United States, he numbered his benches starting with the highest in northeast and north central Montana. This is the Flaxville planation surface or *bench number one*. Since the Cypress Hills is a higher planation surface in Canada, he was later forced to call it *bench number zero*. Alden's two lower altitude planation surfaces are called *bench numbers two and three* (see Chapter 37). The lowest altitude in the area is the river and stream valleys.

[1] Alden, W.C. 1932. Physiography and glacial geology of eastern Montana and adjacent areas. *U. S. Geological Survey Professional Paper 174*, Washington, D.C.

Peter Klevberg and I have been analyzing these surfaces since the early 1990s.[2,3] They demonstrate a pattern that appears to be *common around the world* and provide insights into the Retreating Stage of the Flood. We believe Alden was generally correct in deducing the four planation surfaces were once much larger and have been reduced to the erosional remnants we see today. The actual picture is more complex than Aldan envisioned. The Wood Mountain Plateau in southern Saskatchewan, described in Chapter 37, is *intermediate* between benches zero and one.

Figure 36.2. The flat top of the Cypress Hills near Reser Lake.

The Cypress Hills Planation Surface

The highest planation surface on the High Plains is the Cypress Hills, bench number zero in Alden's scheme and named for several large erosional remnants in southeast Alberta and southwest Saskatchewan, Canada (see Figure 14.1). The Cypress Hills extend approximately 100 miles (160 km) east-west and are wedge shaped, about 3 miles (5 km) wide at the western edge and about 25 miles (40 km) wide at the eastern edge. They are "remarkably flat-topped" across a broad anticline[4] (Figure 36.2 and see Figure 14.2). It is now accepted that the next plateau to the east northeast, the quartzite-capped Swift Current Plateau, is an extension of the Cypress Hills planation surface (see Appendix 6).

The elevation of the Cypress Hills is as high as 4,810 feet (1,466 m) msl at the western end, sloping downward toward the east at about 14 ft/mi (2.7 m/km) to an elevation of 3,510 feet (1,070 m) at its eastern end[5] (Figure 36.3). The western end is about 1,000 feet (300 m) above the surrounding plain, the elevation of Alden's Bench Number one, and more than 2,500 feet (760 m) higher than the Milk River to the south and the South Saskatchewan River to the north.

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[2] Klevberg, P. and M.J. Oard, 1998. Paleohydrology of the Cypress Hills Formation and Flaxville gravel. In, Walsh, R.E. (editor), *Proceedings of the Fourth International Conference on Creationism*, technical symposium sessions, Creation Science Fellowship, Pittsburgh, PA, pp. 361–378.

[3] Oard, M.J. and P. Klevberg, 1998. A diluvial interpretation of the Cypress Hills Formation, Flaxville gravels, and related deposits. In, Walsh, R.E. (editor). *Proceedings of the Fourth International Conference on Creationism*, technical symposium sessions, Creation Science Fellowship, Pittsburgh, PA, pp. 421–436.

[4] Broscoe, A.J. 1965. The geomorphology of the Cypress Hills-Milk River canyon area, Alberta. *Alberta Society of Petroleum Geologists 15th Annual Field Conference Guidebook*, part I, p. 75.

[5] Vonhof, J.A. 1965. The Cypress Hills Formation and its reworked deposits in southwestern Saskatchewan. *Alberta Society of Petroleum Geologists 15th Annual Field Conference Guidebook*, part I, pp. 142–161.

Therefore, erosion has removed over 2,500 feet (760 m) of sedimentary rocks surrounding the western Cypress Hills in forming the lower planation surfaces. The eastern end of the Cypress Hills is not as high, only about 330 feet (100 m) above the next planation surface below and 700 feet (215 m) above the rivers. The Cypress Hills was most likely a continuous planation surface over long distances from west to east and north to south before being dissected.[6,7] Dissection would have happened either during the later stages of the Flood when the sedimentary rocks were eroded and/or by post-Flood Ice Age floods.[8]

Figure 36.3. The flat top of the eastern Cypress Hills near Eastend, southwest Saskatchewan.

The western Cypress Hills, called the western block, is separated from the central Cypress Hills, or central block, by an east-west gap 6 miles (10 km) wide and about 330 feet (100 m) deep. Hummocky till and large crystalline erratic boulders are common, indicating glacial erosion and deposition probably just modified a gap carved by late in the Flood by channelized erosion.

The eastern Cypress Hills is more heavily dissected by narrow channels and is covered with a thin veneer of hummocky glacial debris (Figure 36.4). Its top is lightly eroded indicating glaciation there was short and only produced meltwater channels.

In view of the large number of postulated ice ages lasting 2.6 million years, it is truly remarkable that the Cypress Hills still exist. Equally remarkable is the fact that they exhibit so little glacial erosion. This lack of erosion is further evidence there was just one short Ice Age.[8,9] Taking into account the 6 mile (10 km) gap and channels that were likely carved by meltwater streams, the Cypress Hills represent a large planation surface that once covered a continuous area

[6] Vreeken, W.J., R.W. Klassen, and R.W. Barendregt, 1989. Davis Creek silt, an early Pleistocene or late Pliocene deposit in the Cypress Hills of Saskatchewan. *Canadian Journal of Earth Sciences* 26:192–198.
[7] Vreeken, W.J. and J.A. Westgate, 1992. Miocene tephra beds in the Cypress Hills of Saskatchewan, Canada. *Canadian Journal of Earth Sciences* 29:48–51.
[8] Oard, M.J., 2004. *Frozen In Time: The Woolly Mammoth, the Ice Age, and the Bible*, Master Books, Green Forest, AR.
[9] Oard, M.J., 1990. *An Ice Age Caused by the Genesis Flood*, Institute for Creation Research, Dallas, TX.

of about 1,600 mi^2 (4,000 km^2).[10]

Figure 36.4. Hummocky till from glaciation on top of the eastern Cypress Hills.

The quartzite gravel capping the Cypress Hills is a very remarkable feature (see Chapter 14 and Appendix 6). The gravel, called the Cypress Hills Formation, averages about 100 feet (30 m) thick.[11] It is mostly cemented forming a conglomerate (see Figures 14.3 and 14.4). The cobbles and boulders have abundant percussion marks and indicate high speed turbulent flow from the western Rocky Mountains, probably coming from as far away as central Idaho.[12,13]

The Cypress Hills Planation Surface Once Much Larger

In the past the Cypress Hills planation surface extended,[14] possibly as far north as central Canada and as far south as northeastern Wyoming. Isolated high altitude erosional remnants, correlated by Alden[1] to his bench number zero, can still be found dotting the high plains. These remnants include gravel-capped Sheep Mountain, east-central Montana, 1,400 feet (425 m) above the Yellowstone River; Pine Ridge, south-central Montana, 1,100 feet (335 m) above the Big Horn River; and Tatman Mountain, in the middle of the Bighorn Basin, north-central Wyoming, 1,230 feet (375 m) above the Greybull River (Figure 36.5).[1]

When we connect all of the remnants, the Cypress Hills planation surface extended about 300 miles (500 km) east-west and at least 600 miles (1,000 km) north-south, sloping gently eastward from the Rocky Mountains. This draws us to conclude the water running off the Rockies during planing was possibly over 600 miles (1,000 km) wide! Since the depth of the flow would be much less than the width, the current represents a *sheet of water*. It is reasonable to conclude the Cypress Hills planation surface formed during the Sheet Flow Phase of the Flood.

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[10] Crickmay, C.H., 1965. An interpretation of erosional discrepancy, Cypress Hills. *Alberta Society of Petroleum Geologists 15th Annual Field Conference Guidebook*, part I, pp. 66–73.
[11] Vonhof, Ref. 5, p. 143.
[12] Leckie, D.A. and R.J. Cheel, 1989. The Cypress Hills Formation (upper Eocene to Miocene): a semi-arid braidplain deposit resulting from intrusive uplift. *Canadian Journal of Earth Sciences* 26:1,918–1,931.
[13] Leckie, D.A., 2006. Tertiary fluvial gravels and evolution of the Western Canadian Prairie landscape. *Sedimentary Geology* 190:139–158.
[14] Leckie, Ref. 13, p. 155.

Figure 36.5. Flat-topped planation surface on Tatman Mountain, central Bighorn Basin, Wyoming, which is 1,230 feet (375 m) above the Gerybull River, as seen from the edge of a lower gravel-capped planation surface (view south).