Appendix 7

The Enigmatic Driftless Area

During an Ice Age, there were unglaciated areas within the boundary of the former ice sheet called a "driftless area." The word *drift* is an old term for glacial till, the debris left behind after an ice sheet or glacier melts. The Wood Mountain Plateau and the adjacent eastern Flaxville Plateaus were *unglaciated* during the Ice Age. The area lies north of the boundary of the ice sheet and, therefore, is considered a driftless area.^{1,2} The Wood Mountain/Flaxville driftless area is similar to the one in southwest Wisconsin. The boundary of the ice sheet south of the Wood Mountain/Flaxville driftless area is supposed to be tens of miles to the south in the hills south of the Milk River.

The altitude of Wood Mountain and Flaxville plateaus driftless area is only about 2,700 feet (825 m) above sea level. It is only a little above the surrounding areas and about 700 feet (215 m) above the Milk River. It is a surprisingly low altitude plateau to have escaped glaciation. The Wood Mountain/Flaxville driftless area is, therefore, enigmatic to uniformitarian glaciologists, who view the ice sheet as very thick:

...the area escaped glaciation but how this could have happened is not easily explained in view of the facts that the area is well inside the border of the glacial drift, and is not a markedly high area.³

Additionally, the top 330 feet (100 m) of the western Cypress Hills was never glaciated.⁴ Portions of the Milk River Hills in southwest Alberta and adjacent Montana also were not glaciated. The tops of the Sweetgrass Hills of north central Montana remained above the ice.⁵

Uniformitarian Ice Age Scheme Does Not Work

The ice sheet must have been *very thin* in north central Montana, southern Alberta, and southwest Saskatchewan. In the western cypress Hills, the ice must have been only about 700 feet (215 m) thick. Around the driftless area, it was only a few hundred feet thick. Considering the thin ice in Canada and the fact its southern border was in north central and northeastern Montana, the top of the ice sheet in a north-south direction must have been nearly *flat*.

This is important to note because an ice sheet moves in the direction of the downward dip of its surface slope. Mainstream glaciologists believe the ice sheet developed

¹ Wickenden, R.T.D., 1931. An area of little or no drift in southern Saskatchewan. *Proceedings and Transactions of the Royal Society of Canada* 25:45–47.

² Lemke, R.W., W.M. Laird, M.J. Tipton and R.M. Lindvall, 1965. Quaternary geology of northern Great Plains. In, Wright, Jr., H.E. and D.G. Frey (editors), *The Quaternary of the United States*, Princeton University Press, Princeton, NJ.

³ Wickenden, Ref. 1, p. 46.

⁴ Catto, N.R. 1983. Loess in the Cypress Hills, Alberta, Canada. *Canadian Journal of Earth Sciences* 29:1, 159–1,167.

⁵ Mathews, W.H., 1974. Surface profiles of the Laurentide ice sheet in its margin areas. *Journal of Glaciology* 13(67):37–43.

in northern Canada and moved very slowly south into the United States over tens of thousands of years. This would mean the ice sheet moved south through southern Canada and northern Montana. The elevation of the land, not counting the plateaus and mountains, is lower in southern Canada than northern Montana so the ice sheet was moving *uphill*? It is difficult for the ice to move south from northern Canada uphill into northern Montana and southern Saskatchewan. The details of glaciation in northeast and north central Montana and adjacent Canada are unique and difficult to fit into the uniformitarian ice age. The observations fit nicely into the post-Flood rapid ice age model because the ice sheet would have formed more or less *in place* and been relatively thin.^{6,7}

The glacial debris in southern Alberta, southern Saskatchewan, and northern Montana shows only one ice age, as expected in the post-Flood model. Because of the ice age debris, even some uniformitarian glaciologists are convinced central and southern Alberta experienced only one ice age.⁸

Most uniformitarian scientists believe there were fifty ice ages repeating in intervals of 40,000 or 100,000 years during the past 2.6 million years.⁹ This assertion is based on the popular but problematic assumption of the astronomical theory of the ice ages, bol-stered by oxygen isotope ratios in deep-sea cores.¹⁰ It is remotely possible that one ice age in the uniformitarian model could account for the observations, but it stretches credulity to propose more than fifty ice ages could. This would require the ice sheet in fifty separate ice ages to consistently miss the low-altitude driftless area, if each ice sheet extended as far south as the Wood Mountain Plateau.

The Mystery of the Erratic Boulders in the Driftless Area

The difficulties for the uniformitarian model are amplified by a discovery Peter Klevberg and I made. We found igneous glacial erratics on top of the Wood Mountain Plateau. The plateau is the highest point of the driftless area. Interestingly, we found *no* further signs of glaciation in the region. This left us with the question, how could erratic boulders end up in an unglaciated area?

One way I can imagine this happening is as the ice age wound down, a glacial lake formed south of the ice sheet. This lake rose higher than the top of the driftless area. Icebergs carrying boulders would float, ground, and eventually melt, dropping the erratic boulders in place. This is similar to how glacial erratic boulders were spread south of the ice sheet boundary during the Lake Missoula flood.¹¹

 ⁶ Oard, M.J., 1990. An Ice Age Caused by the Genesis Flood, Institute for Creation Research, Dallas, TX.
⁷ Oard, M.J., 2004. Frozen In Time: The Woolly Mammoth, the Ice Age, and the Biblical Key to Their Secrets.

Master Books, Green Forest, AR.

⁸ Young, R.R., J.A. Burns, D.G. Smith, L.D. Arnold, and R.B. Rains, 1994. A single, late Wisconsin, Laurentide glaciation, Edmonton area and southwestern Alberta. *Geology* 22:683–686.

⁹ Walker, M. and J. Lowe, 2007. Quaternary science 2007: a 50-year retrospective. *Journal of the Geological Society*, London 164:1,073–1,092.

¹⁰ Oard, M.J., 2005. *The Frozen Record: Examining the Ice Core History of the Greenland and Antarctic Ice Sheets*, Institute for Creation Research, Dallas, TX.

¹¹ Oard, M.J., 2004. *The Missoula Flood Controversy and the Genesis Flood*, Creation Research Society Monograph No. 13, Chino Valley, AZ