

Appendix 8

Cenozoic Fossil Dating Scheme Illusory

The sand interbeds within the eastern Cypress Hills Formation gravels have yielded abundant fossils of horses, camels, rabbits, saber-toothed cats, rhinoceroses, giant pigs, titanotheres, oreodonts, marsupials, and rodents.^{1,2,3,4,5} Reptiles and amphibians, including crocodiles, have also been excavated indicating a *tropical to subtropical* paleoclimate.⁶ Some of the mammal fossils dated the Cypress Hills Formation as “early Oligocene”: “Now that we recognize the formation as mostly, if not entirely, of Early Oligocene age, a more critical attitude is in order.”⁷ Russell meant a critical attitude toward the fossil horses in the Cypress Hills formation (see below). He reclassified some of them, still assuming they were early Oligocene (see Figure 5.3 on the divisions of the Cenozoic in the geological column).

The Top of the Cypress Hill Gravel Becomes Younger

However, John Storer found “younger” fossils, mainly horses, near the top of the Cypress Hills Formation. These he dated as mid to early Miocene.^{8,9} Horses are a common fossil in the Cypress Hills and many other areas of the Northern Hemisphere. There was strong opposition to this discovery at first, but it is now generally accepted.¹⁰ The new date *connected* the top of the Cypress Hills gravel to the gravel on the Wood Mountain Plateau south and southeast of the Cypress Hills, which is also dated as Miocene.

¹ Krishtalka, L., R.J. Emry, J.E. Storer, and J.F. Sutton, 1982. Oligocene multituberculates (Mammalia: Allotheria): youngest known record. *Journal of Paleontology* 56:791–794.

² Russell, L.S., 1953. Tertiary stratigraphy of southwestern Saskatchewan. In, Parker, J.M. (editor), *Billings Geological Society Guidebook, Fourth Annual Field Conference*, Billings Geological Society, Billings, MT, pp. 106–113.

³ Storer, J.E. and H.N. Bryant, 1993. Biostratigraphy of the Cypress Hills Formation (Eocene to Miocene), Saskatchewan: equid types (Mammalia: Perissodactyla) and associated faunal assemblages. *Journal of Paleontology* 67:660–669.

⁴ Storer, J.E., 1984. Fossil mammals of the Southfork Local Fauna (early Chadronian) of Saskatchewan. *Canadian Journal of Earth Sciences* 21:1,400–1,405.

⁵ Storer, J.E., 1994. A latest Chadronian (late Eocene) mammalian fauna from the Cypress Hills, Saskatchewan. *Canadian Journal of Earth Sciences* 31:1,335–1,341.

⁶ Holman, J.A., 1972. Herpetofauna of the Calf Creek local fauna (Lower Oligocene: Cypress Hills formation) of Saskatchewan. *Canadian Journal of Earth Sciences* 9:1,612–1,631.

⁷ Russell, L.S., 1975. Revision of the fossil horses from the Cypress Hills Formation (Lower Oligocene) of Saskatchewan. *Canadian Journal of Earth Sciences* 12, p. 636.

⁸ Storer, J.E. 1975. Tertiary mammals of Saskatchewan Part III: the Miocene fauna. *Life Sciences Contributions Royal Ontario Museum Number 103*, Toronto, Canada.

⁹ Storer, J.E., 1978. Tertiary sands and gravels in Saskatchewan and Alberta: correlation of mammalian faunas. In, Stelck, C.R. and B.D.E. Chatterton (editors), *Western and Arctic Canadian Biostratigraphy*, Geological Association of Canada Special Paper 18, pp. 595–602.

¹⁰ 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.

The Wood Mountain gravel is identical to the Cypress Hills Formation gravel,¹¹ so earlier it was assumed that they were the same age. But then “Miocene” fossils of the wrong age were discovered in the Wood Mountain gravel.^{9,12,13} It was odd to have the same gravel give two different ages. Now with the discovery of the Miocene fossils in the Cypress Hills Formation the evolutionary dating problem between the age of the Cypress Hills and the Wood Mountain gravels has supposedly been “solved.”

The Bottom of the Cypress Hills Gravel Becomes Older

There was also a problem with connecting the Cypress Hills to the Swift Current Plateau, dated as Eocene¹²—older than the Cypress Hills Formation (see Appendix 6). It is interesting that “Eocene” fossils have now been found in the Cypress Hills Formation,⁵ so scientists can now say the gravels capping the Swift Current Plateau and the Cypress Hills are the same age.

It is strange scientists missed these fossils for the past hundred years. Storer and Bryant ponder how this could occur:

How could we fail to see such a major difference in more than a hundred years of research on the Cypress Hills Formation? The answer is probably a combination of incremental discovery, willingness to accept assumptions, and bad luck.¹⁴

Storer and Bryant hint that subjective elements in fossil classification, especially in regard to the horse series, has led to the date changes:

The nature of *Archaeohippus stenolophus* represents the factor of bad luck: *Archaeohippus* retains many primitive features, and superficially looks a lot like *Miohippus*, especially if the investigator has no additional clues in the form of associated fauna.¹⁴

Reading between the lines suggests lots of wiggle room for classifying and dating horses.

The uniformitarian scientists now date the bottom of the Cypress Hills formation at about 45 million years old,¹⁵ while the top is about 15 million years old. So, the well-rounded quartzite cobbles and boulders accumulated on the Cypress Hills during a 30 million year period. Incredibly, there is no difference in the weathering on the quartzites from the bottom to the top.

All the Gravels Identical

Originally, the fossils dated the Flaxville gravels “upper Miocene” and “lower Pliocene,” but then an “upper Pliocene” horse fossil showed up giving them a younger date.¹⁶

¹¹ Kupsch, W.O. and J.A. Vonhof, 1967. Selective cementation in Tertiary sands and gravels, Saskatchewan. *Canadian Journal of Earth Sciences* 4:769–775.

¹² Russell, L.S., 1950. The Tertiary gravels of Saskatchewan. *Transactions of the Royal Society of Canada* 44 (Series III):51–59.

¹³ Russell, L.S. and R.T.D. Wickenden, 1933. An Upper Eocene Vertebrate Fauna from Saskatchewan. *Transactions of the Royal Society of Canada* 27 (Series III):53–65.

¹⁴ Storer and Bryant, Ref. 3, p. 667.

¹⁵ 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.

¹⁶ Storer, J.E., 1969. An upper Pliocene Neohipparion from the Flaxville Gravels, northern Montana. *Canadian Journal of Earth Sciences* 6:791–794.

The uniformitarian dates for the Flaxville gravel are around 5 to 10 million years old. This makes them younger than all the other locations. But Flaxville gravel is indistinguishable from the Wood Mountain gravel,⁹ which is indistinguishable from the Cypress Hills gravel. We could add the lower altitude Saskatchewan gravels into the mix. They are younger than the Flaxville gravel and dated “early Pleistocene and Pliocene” (around 2 to 4 million years old). The Saskatchewan gravels are also similar to the Cypress Hills gravel!¹⁷

In other words, all of the High Plains of Montana and Canada, no matter what altitude and which planation surface they lie upon, contain identical quartzites which supposedly range in dates from 2 to 45 million years old in the uniformitarian timescale, based on fossils. This is why Peter Klevberg and I have called all the gravel “Cypflax.” There is also little or no weathering on the quartzite, except a little weathering on some quartzites at lower elevations within the glacial debris.

This suggests all of the gravels were laid down rapidly and energetically in one event. The Cypress Hills gravel was first deposited over a planation surface of wide extent. Then, the planation surface was eroded, leaving behind erosional remnants of which the Cypress Hills is the largest remnant. The Flaxville and Wood Mountain gravels and the Saskatchewan gravels were deposited at a lower altitudes. This implies deposits dated as Eocene to early Pleistocene are essentially *contemporaneous* calling into question the value of Cenozoic fossil dating.

¹⁷ Westgate, J.A. 1968. Surficial geology of the Foremost—Cypress Hills area, Alberta. *Research Council of Alberta Bulletin 22*, Edmonton, Alberta, Canada.