Chapter 55

Inselbergs and Tower Karst Tens of Millions of Years Old?

Both inselbergs and tower karst are erosional remnants that rise above an erosion or planation surface (Figure 55.1). It is difficult for uniformitarian scientists to explain them as erosional remnants, but it is even more difficult to explain how they survived for millions of years considering the present rate and character of erosion.

Figure 55.1. Spitzkoppe in the Namib Desert of Namibia is probably the tallest inselberg at 3,600 feet (1,100 m) above the surrounding planation surface (wikipedia).

Inselbergs

Inselbergs are dated many millions to tens of millions of years old; some are even claimed to be older than 100 million years.[1] Twidale wrote that some inselbergs in Western Australia date from the late "Mesozoic" or earliest "Cenozoic."[2] A few are given an early "Mesozoic" age, well

[1] Jeje, L.K., 1973. Inselberg's evolution in a humid tropical environment: the example of South Western Nigeria. *Zeitschrift für Geomorpholgie N. F.* 17:220.
[2] Twidale, C.R., 1982. *Granite Landforms*, Elsevier Scientific Publishing Company, New York, NY, p. 147.

over 100 million years old.[3] Thomas stated:

> Large bornhardts of 100-500 m [330-1,640 feet] height would require proportionately much longer, because simple excavation cannot account for such hills. Their life span may be measured in terms of several cycles of planation, or phases of uplift and dissection, and their 'ages' may be 10^7 years, and perhaps older in some cases (quotes his).[4]

In the Gawler Range of Australia, bornhardts of Mesozoic age show the mountains eroded very little since that time.[5] This is hard to believe, considering the tectonics, volcanism, sea-level change, and climate change that would take place over such a great span of time.

Some Weather Rapidly Today

Paradoxically, some bornhardts are weathering relatively fast today,[6] According to the weathering hypothesis, an inselberg should remain unweathered while the surrounding rock erodes away. The source of weathering, water, is thought to simply run off and pool at the base of the developing inselberg. This at first glance seems true, but King noticed that little rainfall runs off of some bornhardts,[7] so the water must be absorbed within the cracks and crevices. Thomas noted runoff from the dome causes weathered joint planes resulting in gullies and hollows.[8] Ollier stated present-day weathering is likely working to break down inselbergs through cracking.[9] Weathering pits, rills, gutters, fractures and other similar features can be seen on the tops of many bornhardts. These indicate active weathering.[10,11] Bornhardts should weather rapidly and therefore be unable to reach their great heights especially considering their age. In a weathering experiment in which weathering tablets were placed on the pediment/inselberg juncture at the base of the inselberg, it was discovered weathering was more rapid at the base of the inselberg.[12] Considering present processes (the uniformitarian assumption), it appears it is impossible for inselbergs to be ancient.

Their "Ages" a Major Mystery

Because of present day erosion rates, the survival of inselbergs for tens of millions of years is a great mystery for uniformitarian scientists. This must be added to all the other geomorphological mysteries, according to Campbell and Twidale: "Thus the bornhardts are yet another group of forms of great antiquity, the survival of which remains to be fully explained

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[3] Twidale, C.R. 1982. The evolution of bornhardts. *American Scientist* 70:276.
[4] Thomas, M.F., 1978. The study of inselbergs. *Zeitschrift für Geomorpholgie N. F.* 31:33.
[5] Campbell, E.M. and C.R. Twidale, 1991. The evolution of bornhardts in silicic volcanic rocks in the Gawler Ranges. *Australian Journal of Earth Sciences* 38:90.
[6] Jeje, L.K., 1973. Inselberg's evolution in a humid tropical environment: the example of South Western Nigeria. *Zeitschrift für Geomorpholgie N. F.* 17:194-225.
[7] King, L., 1948. A theory of bornhardts. *The Geographical Journal* 112:83-87.
[8] Thomas, M.F., 1965. Some aspects of the geomorphology of domes and tors in Nigeria. *Zeitschrift für Geomorpholgie* 9:63-81.
[9] Ollier, C.D., 1960. The inselbergs of Uganda. *Zeitschrift für Geomorpholgie* 4:43-52.
[10] Twidale, C.R., 1978. On the origin of Ayers Rock, Central Australia. *Zeitschrift für Geomorpholgie N. F.* 31:177-206.
[11] Twidale, Ref. 2, pp. 213-242.
[12] Campbell, M.D., R.A. Shakesby, and R.P.D. Walsh, 1987. In, Gardiner, V. (editor), *International Geomorphology 1986*, Proceedings of the 1st International Conference on Geomorphology, Part II, pp. 1249-1270.

(e.g. Twidale 1976)."[13] Small wrote:

> One might argue that the old pediplain surfaces have been much modified by late-Tertiary and Quaternary denudation, but in that case destruction of most of the associated inselbergs and koppies should also have occurred.[14]

The origin of inselbergs is especially mysterious when the continents can be reduced to near sea level in a minimum of 10 million and a maximum of 50 million years (see Chapter 9):

> ...there is general agreement that even after due allowance is made for isostatic recovery large areas of high land would be reduced to baselevel [sea level] in periods of the order of 35-40 Ma. Thus no inselberg ought be of greater age than this; in stratigraphic terms no inselberg ought to predate the late Eocene and *most ought to be much younger* (emphasis mine).[15]

Lester King also summarized:

> In a nutshell, the object of bornhardt enquiry is not to find what causes rock materials to decay within the body of the earth's crust, but what makes bornhardts stand up so spectacularly in the landscape.[16]

Twidale and Bourne corroborate: "That an inselberg could survive for so long as is suggested here calls for considerable mental adjustment."[17] I certainly agree; it really should be enough to conclude the millions of years did not exist. Twidale and Bourne later said all hypotheses that attempt to explain the exposure of landforms for tens of millions of years falls short of solving the age problem:

> Various mechanisms and factors have been suggested in explanation of such very old palaeoforms (unequal activity, reinforcement mechanisms, stability of rocks when dry: Crickmay 1976; Twidale 1976, 1994) but they alleviate rather than resolve the difficulty.[18]

Tower Karst

Tower karst is also considered to be many millions of years old. Based on fossils, the top of the tower karst in southwest China dates from the late Cretaceous, around 75 million years old.[19] Daoxian stated:

> However, bearing in mind the available corrosion rate data for this area (100-300mm/thousand years, or possibly 200-600m during the Quaternary) [4-12 inches/1000 years, or possibly 650-1,970 feet during the Quaternary], it is difficult to imagine that a peak capped by red breccia [of late Cretaceous age] which is also soluble, like the Old Man Hill … with altitude 320m [1,500 feet] and relative height 170m [560 feet], could have started evolving from the Early Tertiary.[20]

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[13] Campbell, E.M. and C.R. Twidale, 1991. The evolution of bornhardts in silicic volcanic rocks in the Gawler Ranges. *Australian Journal of Earth Sciences* 38:90.

[14] Small, R.J., 1978. *The Study of Landforms: A Textbook of Geomorphology*, second edition, Cambridge University Press, London, U.K., p. 131.

[15] Twidale, Ref. 2, p. 146.

[16] King, L., 1975. Bornhardt landforms and what they teach. *Zeitschrift für Geomorpholgie N. F.* 19:311.

[17] Twidale, C.R. and J.A. Bourne, 1975. Episodic exposure of inselbergs. *GSA Bulletin* 86:1,480.

[18] Twidale, C.R. and J.A. Bourne, 1998. Origin and age of bornhardts, southwest Western Australia. *Australian Journal of Earth Sciences* 45:913.

[19] Daoxian, Y., 1987. New observations on tower karst. In, Gardiner, V. (editor), *International Geomorphology 1986*, Proceedings of the 1st International Conference on Geomorphology, Part II, pp. 1,109-1,123.

[20] Daoxian, Ref. 19, pp. 1,121-1,122.

Baker and Twidale also stated:

> Domical forms in limestone, sandstone and granite are converted to steep-sided towers. Such steepening through time is *contrary* to the expectable consequences of any of the conventional models of landscape evolution (emphasis mine).[21]

Steep faces weather faster than horizontal surfaces. So, assuming present processes, we should not expect any tower karst to develop, especially those with vertical cliffs. Given the current erosion rate through corrosion of the limestone, it seems most unlikely that a karst tower lasted since the late Cretaceous or early Tertiary, around 75 to 30 million years!

Uniformitarian dating of tower karst and inselbergs runs counter to physically observed processes such as rock weathering. It is one more piece of evidence from geomorphology that millions of years are a great exaggeration.

[21] Baker, V.R. and C.R. Twidale, 1991. The reenchantment of geomorphology. *Geomorphology* 4:87.