

always remain dinosaurs, just as God has created them. And I believe God created them without feathers. Although I am perfectly aware that this is not a scientific argument, I believe that a featherless *Deinonychus* as reconstructed by paleontologists before the discoveries in Liaoning, is more logical a creature than the heavily feathered one they believe in now. Mr Clark uses the expression 'feathered theropods' which still means 'feathered dinosaurs' and he states their existence is a proven fact. This is where we are definitely at variance.

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### References

1. See further documentation of the biblical *challenge-riposte method* in Sarfati, J., *Refuting Compromise* pp. 20 ff, Master Books, 2004.
2. Matthews, M., *Scientific American* admits creationists hit a sore spot: Need for a 'new paradigm' in bird evolution, <[www.creationontheweb.com/content/view/2775](http://www.creationontheweb.com/content/view/2775)>, 13 March 2003.
3. E.g. Jonathan Sarfati argues, 'We have often pointed out that there is nothing in the creationist model that states that dinosaurs could not have feathers (or fur, for that matter). However, nothing so far has been remotely convincing.' New four-winged feathered dinosaur?, <[www.creationontheweb.com/4wings](http://www.creationontheweb.com/4wings)>, 28 January 2003.
4. Feduccia, A., Lingham-Soliar, T., and Hinchliffe, J.R., Do feathered dinosaurs exist? Testing the hypothesis on neontological and paleontological evidence, *Journal of*

## Flood transported quartzites

I am referring to the paper 'Flood transported quartzites: Part 2', in *Journal of Creation* 20(2), 2006.

I also read the article 'Noah's long-distance travellers', in *Creation* magazine 28(3), 2006.

I am really interested in an explanation of how the metamorphism happened.

The quartzites are described as being formed by metamorphism of

sedimentary rock. Heat and/or pressure are required for the metamorphism. If we assume that the sedimentary rocks were laid down during the Genesis Flood, and it is believed that the quartzite boulders were scattered by the receding waters of the Flood, then we are talking of:

- sedimentary layers being laid down at the beginning of the Flood,
- hardening to such an extent that sequential differential uplifting of the land produced enough heat to cause metamorphism of the sediments, producing the quartzites at the top of the layers,
- further uplifting of the continents to start the recession of the waters to scatter the boulders, and
- all of this in more or less one year *while being under water*.

Is all of this feasible or is there another possible source of heat and pressure for the required metamorphism?

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### Michael J. Oard replies:

I hadn't thought about the metamorphism, since it was really not germane to the quartzite project, which demonstrates late Flood transport long distance by fast currents. Regional metamorphism is still a subject for creation research. Even contact metamorphism is not so simple, since I have seen and run across other references where the country rock is not metamorphosed or is merely weakly metamorphosed compared to the assumed temperature of an intrusion that formed a dike or other igneous body.

The quartzites for our study came from the Belt Supergroup, Precambrian and 'dated' about 1.2 Ga. This supergroup is deposited in an elliptically shaped area with a long axis about 700 km. Based on eroded folds, the formation is greater than 20 km thick, and the bottom does not show up



Photo by Michael J. Oard

and the top has been eroded. About 10% of the Belt is quartzite, the other 90% being mostly argillite, a lightly metamorphosed shale. So, the depth of deposition is good enough for the metamorphism, but there could have been other heat and chemical sources during the Flood that would have helped. It is still debated by creationists whether the Belt is a Flood rock or a third day of Creation rock. I favour the former.

So, it looks like some mechanism caused huge rifts in the continental crust and filled them up very early in the Flood. The layers lithified rapidly and then were metamorphosed, which need not have anything to do with uplift. Some creationists believe it could be a hot chemical reaction. Then uplift started in the last half of the Flood and the Flood eroded the material, including the quartzite, spreading the quartzites over 950 km, more likely up to 1200 km away.

Yes, all this is feasible underwater for a one year Flood. Many catastrophic events occurred during the Flood.

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