"VITAL ARTICLES ON SCIENCE/CREATION"

impact

February 1984

No. 128 — THE SKY HAS FALLEN

by Larry Vardiman, Ph.D.*

Introduction

The world-wide flood recounted in Genesis has no parallel in today's world. Yet, few serious attempts have been made in the past to explore the meteorology of the flood and the atmosphere of the antediluvian world. Several advances have recently been made in developing atmospheric models and comparing model predictions with observations. These attempts to understand what the atmosphere (firmament) was like before and during the flood help us to realize that, indeed, "The Sky has Fallen."

Models

One method used to explore geophysical events is to construct a model of the event and then correlate observations with predicted effects of the model. For example, Fultz[1] has built a physical model of the earth's global circulation in a so-called dishpan experiment, and was able to simulate motions we observe in today's atmosphere. Whitcomb and Morris[2] have developed an elementary conceptual model of the vapor canopy theory which Dillow[3] has recently expanded significantly. Dillow[4] has made other important strides forward by attempting to quantify many of the results. He has developed mathematical models of portions of the vapor canopy theory and compared the results with related observations in the geological record.

The conceptual vapor canopy model developed by Dillow specifies that the earth was surrounded by a vapor canopy before the flood of Noah. This pre-flood atmosphere contained the equivalent of about 40 feet of water in the form of a canopy resting on top of the current atmosphere. The canopy condensed suddenly during the 40-day period of Noah's flood causing the universal deluge.

***The Author.** Dr. Vardiman is Associate Professor of Meteorology in the ICR Graduate School, as well as Chairman of the Physical Sciences Department at Christian Heritage College. His Ph.D., from Colorado State University, is in the field of atmospheric science.

Given such a conceptual model, at least three predictions can be compared with appropriate observations to help confirm or refute the model.

1. An extensive greenhouse effect would have occurred prior to the flood.
2. Physical processes would have been different and plant and animal life would have been affected by the increased atmospheric pressure under the vapor canopy.
3. Temperatures in the polar regions would have decreased suddenly and permanently.

Greenhouse Effect

The greenhouse effect gets its name from the observation that the air inside a greenhouse is warmer than the air outside because heat is trapped by the glass windows. Shortwave radiation from the sun travels relatively unimpeded through the glass but longwave radiation returning from the plants and earth inside the greenhouse cannot easily be transmitted back through the glass. Consequently, the heat is trapped and the temperature in the greenhouse rises. A similar effect occurs in our atmosphere today. If it were not for this effect the surface of the earth would be like the moon which gets extremely hot during the day and extremely cold at night.

Prior to the flood the greenhouse effect would have been amplified greatly. An amplified greenhouse effect would have not only caused the atmosphere to be warmer but would have tended to create a uniform temperature distribution from equator to poles. In addition, it is likely that the temperature in the canopy would have been greater than that near the surface of the earth. In the pre-flood atmosphere, if one were to have gone to the mountains to cool off, assuming there were any mountains prior to the flood, he would have found that the temperature increased rather than decreased as he got higher. Such a condition is called an inversion. We know that such conditions lead to pollution episodes around large cities today because under an inversion the air is very stable and the winds are very light to non-existent. In the pre-flood atmosphere the inversion would have been very strong and the pole-to-equator temperature difference would have been very small resulting in light winds, no storms, and no rain! The entire earth, including the poles would have been much warmer than it is today.

There is abundant evidence that the polar regions were much warmer at one time. A fallen 90-foot fruit tree with ripe fruit and green leaves still on its branches has been found in the frozen ground of the New Siberian islands. The only tree vegetation that grows there now is the one-inch high willow. Palm tree fossils have been found in early tertiary strata in Alaska. Large fossil leaves of tropical plants have been found in Permian sandstone 250 miles from the South Pole. Crocodiles were once prolific in New Jersey and England. It is estimated that the mean sea-level air temperatures at the poles was 45°F during the Cretaceous period. Today, the temperature is -4°F.

The evidence of warm polar regions is so extensive that the theory of continental drift was developed by evolutionary geologists to help explain how tropical fossil material can be accounted for at the poles. The

vapor canopy theory on the other hand, explicitly predicts tropical vegetation at the poles without the need for refinements to the theory.

Increased Atmospheric Pressure

Pressure is the weight pressing on a surface per unit area. Pressure increases the lower one goes in the atmosphere because there is more mass of vapor stacked above. Prior to the flood when the vapor canopy was resting on top of the ancient atmosphere, its additional weight would have approximately doubled the surface pressure we experience today.

There are several features in the geologic record which might be explained by greater atmospheric pressure at some time in the past. One of the puzzles of natural history is the gigantic flying reptiles called the pteranodon. This flying reptile had wingspans of up to 20 feet. Many authors have questioned how such an animal could launch itself into the air from flat ground. The minimum speed for the pteranodon has been computed to be more than 15 mph in today's atmosphere. Since the pteranodon could not run, this meant that a wind of more than 15 mph would have had to occur before the reptile could become airborne. Pilots know, however, that it is easier to take off at lower altitudes where the pressure is greater. If the atmospheric pressure were twice what it is today prior to the flood, it would have been much easier and required much lighter winds for the pteranodon to take off. Calculations show that it would have required a wind of just over 10 mph for the pteranodon to get airborne in the pre-flood atmosphere.

Even more intriguing is the recent discovery of the pterosaur, a variation of the pteranodon. The Texas pterosaur is estimated to have had a wingspan of over 50 feet. The minimum flight speed in today's atmosphere would have been just over 15 mph.

If these reptiles flapped their wings to initiate and maintain flight, the power requirements likely would have exceeded the ability of the birds to maintain flight for a long time in today's atmosphere. In the pre-flood atmosphere with its greater pressure, however, it is likely the pteranodon and pterosaur would have had an easier time. In either environment, however, the biomechanics of these reptiles is near the margin of their ability to fly. This may explain why they are extinct today. After the canopy collapsed, the atmospheric conditions were no longer suitable for this type of creature.

Another illustration of the possible effects of greater atmospheric pressure before the flood is the presence of gigantism in the fossil record. Giant dinosaurs weighing over 40 tons, insects with 25-inch wingspans, and giant shell creatures, spiders, and other invertebrates once lived on the earth, but not today. Is it possible that the greater pressure in the pre-flood atmosphere was able to help supply more oxygen to the biomass of these animals allowing them to live longer, healthier lives and grow larger?

Evidences that higher oxygen pressures are beneficial to biological systems was recently discovered in the aquanaut program. One of the aquanauts reported that a severe cut on his hand healed completely with-

in 24 hours while submerged in a diving bell at a pressure of 10 atmospheres. It was theorized that the higher pressure forced more oxygen into the tissue surrounding the wound and healed it at a greater rate. Based on this observation experiments in hyperbaric surgery were started with excellent results. Higher atmosphere pressure has been found to result in relief from some effects of aging and the cure of some other diseases. It is not hard to believe that such an effect could be related in some way to gigantism and the longevity of life evident before the flood.

Polar Temperature Decrease

With the condensation and collapse of the vapor canopy, the warm climate it produced likely disappeared suddenly over the 40-day period of the flood. The radiation balance at the poles is such that without a canopy the temperature would rapidly drop below freezing. Animals caught in the flood, cold, and wind would be frozen rapidly along with the sediment from the flood.

The bones of thousands of animals have, in fact, been found frozen in the tundra of Siberia. Hippopotamuses, sabertooth tigers, mammoths, and other animals normally associated with the tropics have been found frozen, some in relatively fresh condition in the frozen Siberian muck. This muck is full of plant and animal remains to depths of several thousand feet.

The presence of fresh tropical plants and flowers in the stomachs of certain frozen Siberian mammoths indicates the temperature drip in some locations occurred suddenly. The fact that some of the mammoths were frozen in the muck and were found relatively fresh, indicates that the temperature drop was extreme and permanent. Such a scenario matches the predictions of the vapor canopy model very well.

Conclusions

Such a controversial model is bound to create discussion and criticism. At the same time, however, it will increase the interest and enthusiasm of specialists in the atmospheric sciences and the canopy theory. More quantification of such mathematical models is desirable and will result in further improvements of our understanding of the flood and the antecedent atmosphere. The final result will produce even greater confidence in the Word of God.

Acknowledgments

Many of the thoughts and issues presented in this article were developed in discussions and letters with Joseph Dillow. More detail on these topics and many others may be found in his book, *The Waters Above*.

References

1. D. Fultz, A Preliminary report on experiments with thermally produced lateral mixing in a rotating hemispherical shell of liquid. *Journal of Meteorology*, Vol. 6, 1949, pp. 17-33.
2. J.C. Whitcomb, and H.M. Morris, *The Genesis Flood*, Presbyterian & Reformed Publ. Co., 1970, pp. 250-258.
3. J.C. Dillow, *The Waters Above*, Moody Press, 1981, 479 pp.
4. J.C. Dillow, "The Vertical temperature structure of the pre-flood vapor canopy." *Creation Research Society Quarterly*, Vol. 20, 1983, pp. 7-14.