

- ¹²Hess, *op. cit.*, p. 82.
- ¹³Hess, *op. cit.*, pp. 95-100. See also Battan, Louis J., 1974. Weather. Prentice-Hall, Englewood Cliffs, New Jersey. Pp. 24-30. Also Byers, *op. cit.*, pp. 93-98.
- ¹⁴Chandrasekhar, S., 1961. Hydrodynamic and hydromagnetic stability. The Clarendon Press, Oxford. P. 2.
- ¹⁵Schlichting, Hermann (Translated by Dr. J. Kestin, 1968) Boundary-layer theory. McGraw-Hill Book Co., New York. Sixth edition. P. 501.
- ¹⁶Chandrasekhar, *op. cit.*, p. 6.
- ¹⁷Byers, *op. cit.*, p. 71.
- ¹⁸Burkhalter, J. E., and E. L. Koschmieder, 1974. Steady supercritical Taylor vortices after sudden starts. *Physics of Fluids* 17(11):1929-1935; also 1973. Steady supercritical Taylor vortex flow. *Journal of Fluid Mechanics* 53, 547-560.
- ¹⁹Burkhalter, John, 1976. Personal communication, 26 February. Dr. John Burkhalter is Assistant Professor of Aerospace Engineering, Auburn University.
- ²⁰Burkhalter, J. E., 1972. Experimental investigation of supercritical Taylor vortex flow. Ph.D. Dissertation, University of Texas, Austin. (August)
- ²¹Burkhalter, Reference 19.
- ²²*Ibid.*
- ²³*Ibid.*
- ²⁴*Ibid.* However, it seems unlikely that these cells, as they are constructed today, are Taylor vortices, as Burkhalter believes. A similar cell pattern has been produced by Rossby and Fultz in laboratory atmospheric simulation based on thermal differences between the poles and the equator. Furthermore, computer-simulated models of climate have predicted a similar pattern of flow without any reference to concentric cylinders and a moving fluid in between. See Battan, *op. cit.*, pp. 44-51. Also, there is no outer cylinder today, because the canopy has condensed.
- ²⁵Schlichting, *op. cit.*, p. 440.
- ²⁶Byers, *op. cit.*, p. 33.
- ²⁷Holman, J. P., 1967. Heat transfer. McGraw-Hill Book Co., New York. Fourth edition, has a discussion of Fick's law, pp. 426-432.
- ²⁸These extrapolations are incorrectly based on a linear variation, not exponential. Thus it would actually take longer.
- ²⁹Vardiman, Larry, 1977. Personal communication, 13 January. Dr. Vardiman is a Meteorologist with the Bureau of Reclamation, Denver.
- ³⁰Pitts, David, 1968. A computer program for calculating model planetary atmospheres. NASA Technical Note, NASA TN D-4292. (February) National Aeronautics and Space Administration, Washington.
- ³¹A global model including radiative transfer has been developed and could be used in connection with NASA TN D-4292 for modeling the canopy. See Weave, Bryan C., and Fred M. Snell, 1974. A diffuse thin cloud atmospheric structure as a feedback mechanism in global climate modelling. *Journal of the Atmospheric Sciences* 31(10):1725-1734. A standard work on radiative heat transfer in the atmosphere is Kondratyev, K. Ya., 1969. Radiation in the atmosphere. Academic Press, New York.
- ³²Byers, *op. cit.*, p. 365.
- ³³This is based on the equation of state for a gas and on the assumption that the top of the atmosphere has the atmospheric pressure of about 1000 mb under the canopy and that the temperature in this region is at least 600°K.
- ³⁴Handbook of Physics and Chemistry, 56th ed., 1975-76. P. F-56.
- ³⁵Byers, *op. cit.*, p. 343.
- ³⁶*Ibid.*, p. 365.
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- ³⁹Goody, Richard M., and James C. G. Walker, 1972. Atmospheres. Prentice-Hall, New Jersey. Pp. 52-60.
- ⁴⁰*Ibid.*, p. 48.
- ⁴¹Hess, *op. cit.*, p. 137.
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- ⁴³Goody and Walker, *op. cit.*, p. 53.
- ⁴⁴Goody, Richard M., 1977. Personal communication, 25 February. Dr. Goody is Professor of Dynamic Meteorology at Harvard University. Byers, *op. cit.*, p. 40, gives a similar approximation.
- ⁴⁵Goody and Walker, *op. cit.*, p. 65.
- ⁴⁶McKnight, Clyde, 1977. Personal communication, 1 May. The derivation of this formula, being rather involved, is not given here. It applies only for the drop of temperature from the base of the canopy to the "top," where $P = 0$ and $T = 0$.
- ⁴⁷Goody, R. M., 1964. Atmospheric radiation I, theoretical basis. The University Press, Oxford. P. 332.
- ⁴⁸Goody, Reference 44. The true value may lie somewhere between 1 and 3.
- ⁴⁹Holman, *op. cit.*, p. 295.
- ⁵⁰Byers, *op. cit.*, p. 33.
- ⁵¹Whitelaw, Robert (to be published in 1977) The canopy theory and the rift-drift-shift theory. Also personal communication, 30 February 1976.
- ⁵²Hess, *op. cit.*, p. 135.

PELEG'S DIVISION

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The Red Sea is a narrow strip of water extending south-eastward from Suez for about 1300 miles, separating the coast of north-east Africa from the coasts of Saudi Arabia and Yemen. "Its maximum width is 190 miles; its greatest depth 9,580 feet; and its area approximately 169,000 square miles. [It] occupies part of a large rift valley in the continental crust of Africa and Arabia."¹

"The Rift Valley begins in the lower spurs of the Taurus Mountains in Turkey and runs south from there through the Jordan Valley to the Gulf of Aqaba. It includes the natural wonder of the Dead Sea At

Aqaba the Rift is submerged beneath the waters of the Red Sea, to reappear on the African Continent in the Afar depression of northeast Ethiopia. At this point three rift valleys—the Red Sea, the Gulf of Aden and the African Rift—converge.

"It has been said of the Rift Valley that, although it may have its counterpart on another planet, there is nothing [else] like it on earth. There are other rift valleys, but none of these is so great in extent and variety . . . [However, a] rift valley is not really a valley at all; it only looks like one. Ordinary valleys are cut by rivers in their descent from mountains toward the sea; they may be steep-sided and narrow, but a big, old river valley often has a large flat alluvial plain on its floor and steep escarpments some distance back on either side . . . Rift

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valleys . . . differ from the other valleys in that they are the result of movements and fractures in the earth's crust rather than erosion by water or occurring by ice.

"Opinions still differ as to how rift valleys are formed, but the consensus is that they are sections of the earth's crust which have dropped to a lower level between two lines of cracks or faults. In dropping, these sections have often been shattered and formed into smaller steps and escarpments. Sometimes the minor cracks can still be seen running parallel to the main fault lines. Technically a rift valley may be called a graben, a term applied to any place on earth where a section of the surface has dropped into a hollow beneath the surrounding level. Volcanic craters are often grabens."²

"The Red Sea is considered a relatively new sea . . . [the trough of which] apparently formed in at least two complex phases of land motion."³

Although certainly not implied in the quote, the term "relatively new" can be reasonably read as "post-Deluge."

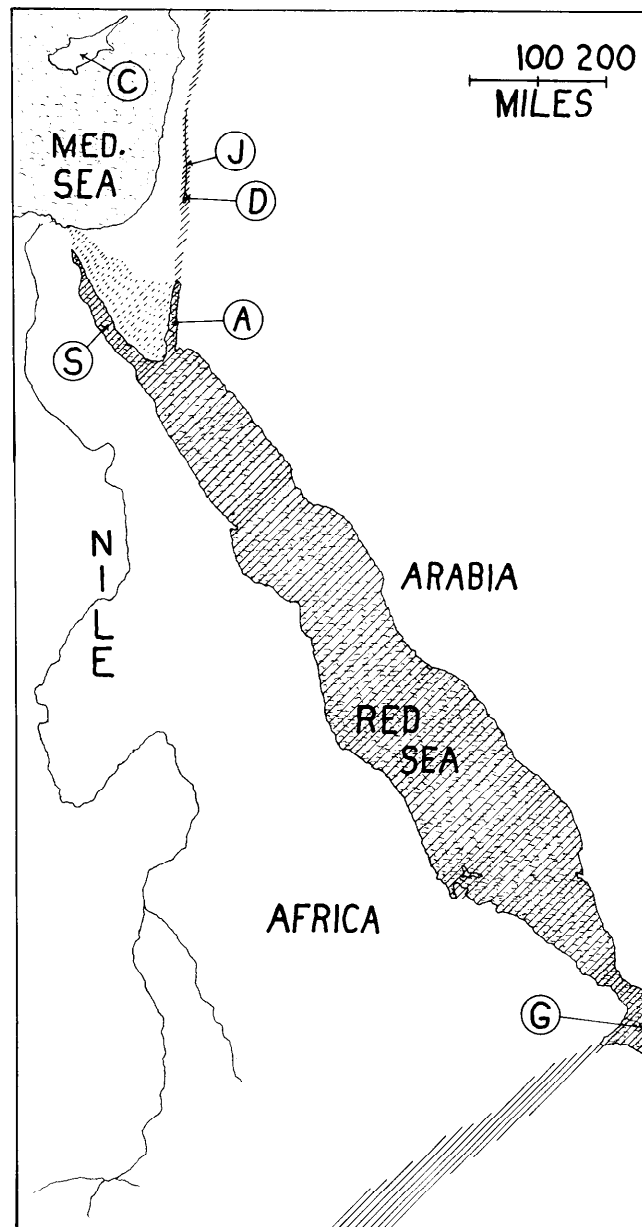
"No water enters the Red Sea from rivers, and rainfall is scant; but the evaporation loss, in excess of 80 inches a year, is made up by an inflow through an eastern channel of the Straits of Bab el-Mandeb from the Gulf of Aden [part of the same rift system]. It is estimated that there is a complete renewal of water in the Red Sea every 20 years."⁴ Until it was first filled, it would have appeared a gaping chasm in the earth's surface.

If there were no Red Sea Rift, and consequently no Red Sea, there would be a virtually uninterrupted land-mass comprising Africa and Asia. A land-bound inhabitant of the Middle East would know one seemingly endless body of land, bordered by major seas in two directions: the Mediterranean Sea and Indian Ocean (or Arabian Sea). Given such a topography, the occurrence of a rift in ancient times in the location and of the magnitude of that beneath the Red Sea would quite conceivably be described as a division of the earth. Might this not be what happened in Peleg's time? ". . . the name of one (son of Eber) was Peleg; for in his days [plural] was the earth divided . . ." Genesis 10:25.

Current scientific opinion has it that the Sinai Peninsula ". . . occupies an ancient block . . . which rose between [the] two rifted areas . . ."⁵ This of course implies that the initial separation of Africa and Asia was complete, which would fit in with the present suggestion.

It remains to be seen whether there is other literary evidence to support the interpretation suggested here. The cause also remains in question: possibly continued stabilization following the Deluge—whatever, it was not a "run-of-the-mill" earthquake to cause such a rift.

It is interesting to note that this is the only Old Testament upheaval not said to have resulted from God's judgment.



This map shows the Rift Valley, indicated by the diagonal shading, in Asia and Africa. It will be understood that where the rift is under water, it may be hard to tell the exact width; hence in such places the width indicated may be somewhat arbitrary. The broken shading, in the Sinai region, is to emphasize the suggestion that it may once have been part of the rift, and may have risen later.

The significance of the letters is as follows: A, Gulf of Aqaba; C, Cyprus; D, Dead Sea; G, Gulf of Aden; J, Jordan River; S, Gulf of Suez.

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- ⁴*Ibid.*
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