



M A R T I N
G A R D N E R



The



Universe

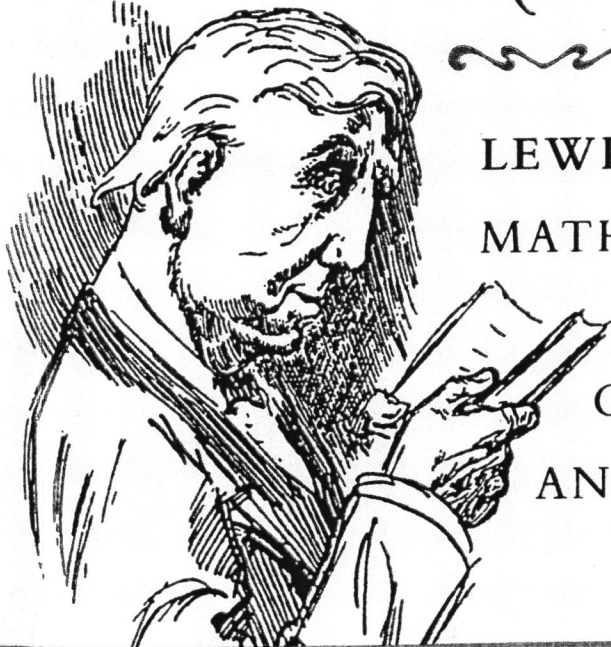
in a

Handkerchief



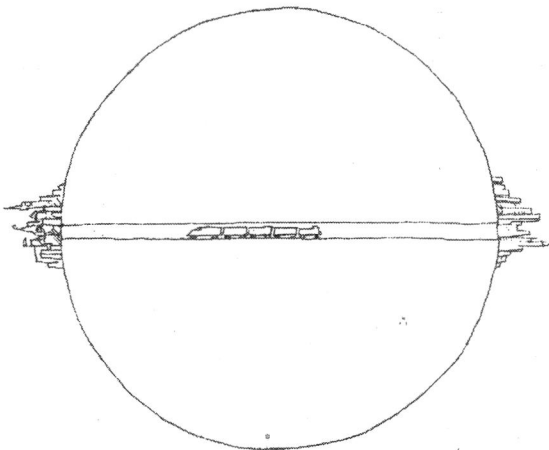
LEWIS CARROLL'S
MATHEMATICAL

RECREATIONS,
GAMES, PUZZLES,
AND WORD PLAYS.



In the same chapter, Mein Herr describes a plan for running trains entirely by gravity. The track goes through a straight tunnel between two widely separated locations. Gravity pulls the train down to the tunnel's center, giving it sufficient momentum to continue up to the other end. Curiously, if friction and air resistance are ignored, the train will go from one end of the tunnel to the other in about 42 minutes regardless of the

[7]



The gravity-operated train invented by the German professor in Carroll's Sylvie and Bruno Concluded. From Martin Gardner's Space Puzzles (Simon and Schuster, 1971).

tunnel's length. As we shall see, 42 had for Carroll some sort of special significance.

In Chapter 11 of *Sylvie and Bruno Concluded*, Mein Herr describes a map drawn on a scale of a mile to a mile:

"It has never been spread out, yet," said Mein Herr: "the farmers objected; they said it would cover the whole country, and shut out the sunlight! So we now use the country itself, as its own map, and I assure you it does nearly as well."

Count Alfred Korzybski, founder of general semantics, liked to say "The map is not the territory." On the Professor's planet the two become identical.