

FADS AND FALLACIES

IN THE NAME OF SCIENCE

MARTIN GARDNER

500
GAR
C 14

Dover Publications, Inc., New York (1957)

KSHS AC-0009

Collier County Public Library
650 Central Ave.
Naples, Florida 33940

CHAPTER 2

Flat and Hollow

EVERY SCHOOLBOY knows that the earth is a solid ball, slightly flattened at the poles, and surrounded by a cosmos of inconceivable immensity. Since Magellan sailed around the globe in 1519, few have doubted that the earth is round. Yet it is precisely because these views are universally accepted that the shape of the earth is such a happy field of speculation for the pseudo-scientist.

Three eccentric theories of the earth have each won a surprising number of adherents in the present century: Voliva's flat earth, the view that the world is hollow and open at the poles, and—most incredible of all—that we are living on the *inside* of a hollow sphere.

It is hard to believe that any literate American, living in the first decade of the Atomic Age, would doubt that the earth is round; yet there are several thousand such persons. Most of them live in a drab little town called Zion, Illinois, on the shore of Lake Michigan about forty miles north of Chicago. They are the remnant of what at one time was a flourishing religious sect called The Christian Apostolic Church in Zion, founded in 1895 by a Scottish faith-healer named John Alexander Dowie.

Rev. Dowie was forcibly expelled from office as "General Overseer" of Zion in 1905. For the next thirty years, the community of 6,000 was ruled by the iron hand of Wilbur Glenn Voliva. Most of its citizens worked for Zion Industries, a million-dollar corporation which turned out an amazing variety of goods from fine lace to fig bars. No town in America had stricter Blue Laws. Motorists along the

Lake front soon learned to avoid stopping in the village; they were likely to be arrested and fined for smoking cigarettes, or whistling on Sunday.

Voliva was a paunchy, baldish, grim-faced fellow who wore a rumpled frock coat and enormous white cuffs. Throughout his life he was profoundly convinced that the earth is shaped like a flapjack, with the North Pole in the center and the South Pole distributed around the circumference. For many years, he offered \$5,000 to anyone who could prove to him the earth is spherical, and in fact made several trips around the world lecturing on the subject. In his mind, of course, he had not circumnavigated a globe; he had merely traced a circle on a flat surface.

According to Voliva, a huge wall of snow and ice prevents ships from sailing off the edge and falling into Hades. Below Hades is a sub-basement where live the spirits of a race that flourished on earth before the time of Adam. The stars are much smaller than the earth and rotate around it. The moon is self-luminous. The sun? Here is what Voliva has to say about the sun:

"The idea of a sun millions of miles in diameter and 91,000,000 miles away is silly. The sun is only 32 miles across and not more than 3,000 miles from the earth. It stands to reason it must be so. God made the sun to light the earth, and therefore must have placed it close to the task it was designed to do. What would you think of a man who built a house in Zion and put the lamp to light it in Kenosha, Wisconsin?"

A special May 10, 1930, issue of the sect's periodical, *Leaves of Healing*, is devoted entirely to astronomy. This 64-page number of the magazine is the most complete statement in print of Voliva's scriptural and scientific reasons for thinking the earth flat and motionless. "Can anyone who has considered this matter seriously," one article asks, "honestly say that he believes the earth is traveling at such an impossible speed? If the earth is going so fast, which way is it going? It should be easier to travel with it than against it. The wind always should blow in the opposite direction to the way the earth is traveling. But where is the man who believes that it does? Where is the man who believes that he can jump into the air, remaining off the earth one second, and come down to the earth 193.7 miles from where he jumped up?"

One of the best known proofs of the earth's rotation makes use

of a device called the Foucault pendulum. This consists of a heavy weight suspended on a long wire. As the weight swings back and forth, inertia causes it to stay in the same plane of swing while the earth turns beneath it. The result is that the plane of swing seems to rotate slowly. The article quoted above disposes neatly of this proof. "If the earth's motion has anything to do with the movement of the pendulum," the author asks, "why must you start it going? The real fact is, and everybody who gives it a serious thought must see, that if the earth were whirling around with the speed astronomers say it is, the pendulum would fly straight out in space and stay there."

But the magazine's *pièce de résistance* is a double-spread photograph showing twelve miles of the shoreline of Lake Winnebago, Wisconsin. *The camera used was an 8 by 10 Eastman view camera . . . reads the explanation. The lens was exactly three feet above the water . . . ANYONE CAN GO TO OSHKOSH AND SEE THIS SIGHT FOR THEMSELVES ANY CLEAR DAY. With a good pair of binoculars one can see small objects on the opposite shore, proving beyond any doubt that the surface of the lake is a plane, or a horizontal line. . . . The scientific value of this picture is enormous.*

Because of Voliva's incredible ignorance, it is easier to see the psychological drives behind his outlandish views than in the case of cleverer cranks who conceal their motives under erudition and shrewd polemics. Voliva's drives were two in number—a desire to defend a religious dogma, and a paranoid belief in his own greatness so far removed from reality as to border on the psychotic. The first hardly needs elaboration. "We are fundamentalists," Voliva once declared. "We are the only *true* fundamentalists." And of course he was right. There are many passages in the Bible which if taken with extreme literalness suggest a flat rather than round earth, and one of the cardinal doctrines of the Dowie cult—one might say its essence—was to regard every word of the Bible as literally true.

However, to explain Voliva's astronomy as no more than a rationalization of a way of interpreting Scripture is to tell only part of the story. In past ages, perhaps, it was the full story. During the early centuries of faith, before the evidence for a round earth became overwhelming, it is easy to see how intelligent and well-informed theologians would prefer a literal interpretation of Old Testament passages. We can understand, for example, Saint Augustine's or Martin Luther's arguing that no human beings could live on the underside of

the earth because they would be unable to see Christ descend from heaven at his Second Coming. But what are we to think of a man of the twentieth century who refused to admit the earth was round?

The answer lies in Voliva's delusions of grandeur. He regarded all astronomers as "poor, ignorant, conceited fools," and once boasted, "I can whip to smithereens any man in the world in a mental battle. I have never met any professor or student who knew a millionth as much on any subject as I do." Once during a courtroom legal wrangle he shouted, "Every man who fights me goes under. Mark what I say! The graveyard is full of fellows who tried to down Voliva. This other bunch will go to the graveyard too. God almighty will smite them." Although his sect never numbered more than ten thousand members he was able to assert, "I am just starting my real work. I shall evangelize the rest of the United States and Europe next."

Voliva often predicted the end of the world. As the years 1923, 1927, 1930, and 1935 rolled by—each of which he had set as the year of doom—it never occurred to him that the repeated failure of the skies to roll up like a scroll indicated any fallibility on his part. His death in 1942 must have been another surprise. He expected to live to 120 on a special diet of Brazil nuts and buttermilk.

Today, things have changed in Zion. Other churches have moved in. The Blue Laws have been repealed. Girls are wearing lipstick and nail polish, and in the summer, even shorts on Enoch Avenue will not cause their arrest. New York University, curiously, now owns controlling interest in Zion Industries. But there are several thousand elderly followers of Voliva, living quietly in the community, who still feel, in the words of their departed leader, that "the so-called fundamentalists . . . strain out the gnat of evolution and swallow the camel of modern astronomy."

Although it is difficult to find a flat-earth believer, in or out of Zion, who is not a fundamentalist, it would be a mistake to suppose that all eccentric views about the earth's shape have their origin in religious superstition. The best example in recent centuries of a non-religious theory is the hollow earth doctrine of Captain John Cleves Symmes, of the U.S. Infantry. After distinguishing himself for bravery in the War of 1812, Symmes retired from the Army and spent the rest of his life trying to convince the nation that the earth was made up of five concentric spheres, with openings several thousand miles in diameter at the poles.

He first announced his theory in 1818 by widely distributing a circular calling for one hundred "brave companions" to join him on a polar expedition to the northern opening—or "Symmes' hole" as it soon became known. It was the Captain's firm belief that the sea flowed through both polar openings, and that plant and animal life abounded on the concave interior as well as on the convex surface of the next sphere.

The more Symmes' theory was ridiculed, the angrier he became and the more energy he spent in finding "facts" to support his views. It became an obsession. For ten years he traveled about the country giving speeches in a stumbling, nasal voice, and trying to raise funds for his voyage. In 1822 and 1823, he petitioned Congress to finance the trip. The petitions were quietly tabled, although he was persuasive enough the second time to win 25 votes. In 1829, his health finally broke under the strain of lecturing. At Hamilton, Ohio, where he made his home at the time of his death, may be seen the weather-beaten monument raised to him by his son. A stone model of the hollow earth caps the memorial.

The most complete descriptions of Symmes' remarkable views are to be found in two books—*Symmes' Theory of Concentric Spheres*, written in 1826 by James McBride, the Captain's number one convert; and *The Symmes' Theory of Concentric Spheres*, published in 1878 by his son, Americus Symmes. Hundreds of reasons are given for believing the earth hollow—drawn from physics, astronomy, climatology, the migration habits of animals, and the reports of travelers. Moreover, a hollow planet, like the hollow bones of the body, would be a sturdy and economical way for the Creator to arrange things. As one disciple put it, "A hollow earth, habitable within, would result in a great saving of stuff." "Reason, common sense, and all the analogies in the natural universe, conspire to support and establish the theory," the Captain's son concluded.

Symmes' beliefs made no dent whatever on the science of his day, but they did leave a strong impress on science fiction. In 1820, an anonymous writer using the name of Captain Seaborn published a fictional burlesque of the hollow earth under the title of *Symzonia*. It is a pleasantly told narrative about a steamship voyage to the southern polar opening where a strong current draws the ship over the "rim of the world." On the concave interior, Captain Seaborn finds a continent which he names Symzonia. There he meets a friendly race

of people who wear snow-white clothes, speak in a musical tongue, and live in a socialist utopia. Edgar Allan Poe's unfinished *Narrative of Arthur Gordon Pym* was intended to describe a similar voyage. Jules Verne's *Journey to the Center of the Earth* probably was not influenced by Symmes' theory, but many later novels and dozens of short stories have been based directly on it.

Did Symmes derive his views from earlier speculations? There is no evidence that he did, although in 1721, Cotton Mather, in a book called *The Christian Philosopher*, defended a similar doctrine. Mather, in turn, had taken his theory from an essay published in 1692 by the famous English astronomer Edmund Halley (for whom the comet was named). Halley argued that the earth had a shell 500 miles thick, then two inner shells of diameters comparable to Mars and Venus, and finally a solid inner sphere about the size of Mercury. Each sphere, he believed, was capable of bearing life. Perpetual daylight could be provided by "peculiar luminaries," such as Virgil places above the Elysian fields, or perhaps the atmosphere between the shells was luminous. When a brilliant display of northern lights took place in 1716, Halley suggested it might be caused by an escape of this glowing gas. Since the earth was flattened at the poles, the outer shell would naturally be a trifle thinner at those points, he reasoned, and therefore likely to allow the gas to escape.

In 1913 an Aurora, Illinois, resident named Marshall B. Gardner—he was in charge of maintenance of machinery for a large corset company—published privately a small book titled *Journey to the Earth's Interior*. It described a hollow earth very much like Symmes', though the author became furious when anyone suggested he had based his thinking on the earlier doctrine. In 1920, he enlarged the book to 456 pages. A frontispiece shows him to be a heavy man with a square face, pale eyes, and a drooping black mustache.

Gardner rejected Symmes' "fantastic notion" of many concentric spheres. Only the outer shell, he insisted, is known to exist. It is 800 miles thick. Inside the hollow, a sun, 600 miles in diameter, gives perpetual daylight to the interior. There are openings at both poles, each 1,400 miles across. Other planets are constructed the same way. The so-called ice-caps on Mars are really openings, and occasionally you can see gleams through them from the inner sun. On the earth, light streaming out of the northern opening produces the *aurora borealis*.

The frozen mammoths found in Siberia came from the interior of the earth, and some may still be living there. The Eskimos also came from inside, as indicated by their legends of a land of never-ending summer. A chapter is devoted to an imaginary journey through the earth—into one polar opening and out the other. A beautiful illustration in full color shows the interior sun just above a watery horizon as the ship draws near to the great rim. Seven chapters are devoted to various expeditions to the North Pole. Gardner proves, of course, that no explorer ever really got there.

The author admits he does not expect to get a “fair hearing” for his views because of the “conservatism of scientists who do not care to revise their theories—and especially when that revision is made necessary by discoveries . . . made independently of the great universities.” The scientists, he writes bitterly, “have their professional freemasonry. If you are not one of them, they do not want to listen to you.” Ultimately, however, he believes the public will accept his views and force the scientists to do likewise.

He makes it quite clear that he does not wish to be confused with scientific pretenders like Symmes who do not base their thinking on solid facts. “Of course it is very easy for anyone to deny all the facts of science and get up some purely private explanation of the formation of the earth. The man who does that is a crank.” Like all paranoid scientists, Gardner was incapable of seeing himself in any other light than as an unappreciated genius, ridiculed at the moment, but destined to eventual honor. He makes the inevitable comparison of himself with Galileo. It was the First World War, he feels, which diverted the world’s attention from his earlier book.

Ironically, it was less than six years after Gardner published the costly, revised edition of his opus, that Admiral Richard Byrd flew over the pole in a plane. There was, of course, no hole. Gardner ceased lecturing and writing, although when he died in 1937, he was still convinced that his theory had some merit.

Fantastic though Symmes’ theory was, or Gardner’s variation, an even more preposterous view was formulated in 1870 by another American—Cyrus Reed Teed. For 38 years, with unflagging energy, Teed lectured and wrote in defense of the theory that the earth was hollow and we were living on the inside!

Not much is known about Teed’s early life. He was born in 1839 on a farm in Delaware County, New York, and in his youth was a

devout Baptist. During the Civil War he served as a private with the Union Army, attached to the field hospital service. Later he graduated from the New York Eclectic Medical College, and established practice in Utica, N. Y. (Eclecticism was a popular medical cult of the last century. It relied mostly on worthless herb remedies.)

The Copernican theory, with its infinite spaces and gigantic suns, must have terrified young Teed. He longed to restore the cosmos to the small, tidy, womb-like character he found implied by Holy Scripture. That the earth was round he could not doubt, for mariners had sailed around it. But if this were so, where did space end? It seemed unthinkable that it would go on and on, without ever reaching a boundary.

One midnight in 1869, when Teed sat alone in a laboratory he had set up in Utica for the study of alchemy, he had a vision. His pamphlet, *The Illumination of Koresh: Marvelous Experience of the Great Alchemist at Utica, N. Y.*, describes this vision in detail. A beautiful woman spoke to him. She told him of his past incarnations and the role he was destined to play as a new messiah. And she revealed to him the key of the true cosmogony.

The key was a simple one. We are on the *inside* of the earth. The astronomers are right, in a way, only they have everything inside-out. Does not the Bible say God “hath measured the waters in the *hollow* of his hand?” (Isaiah 40:12) The more Teed meditated about this, the more he became convinced it was true. In 1870, under the pseudonym of Koresh (the Hebrew equivalent of Cyrus), he published *The Cellular Cosmogony* in which he outlined the new astronomical revelation.

The entire cosmos, Teed argued, is like an egg. We live on the inner surface of the shell, and inside the hollow are the sun, moon, stars, planets, and comets. What is outside? Absolutely nothing! The inside is all there is. You can’t see across it because the atmosphere is too dense. The shell is 100 miles thick and made up of seventeen layers. The inner five are geologic strata, under which are five mineral layers, and beneath that, seven metallic ones. A sun at the center of the open space is invisible, but a reflection of it is seen as our sun. The central sun is half light and half dark. Its rotation causes our illusory sun to rise and set. The moon is a reflection of the earth, and the planets are reflections of “mercurial discs floating between the laminae of the metallic planes.” The heavenly bodies we see,

therefore, are not material, but merely focal points of light, the nature of which Teed worked out in great detail by means of optical laws.

The Foucault pendulum takes up an entire chapter. "The marvelous thing about this experiment," he writes, "is that any man possessing any claim whatever to the title of scientific should accept it." Teed's theory is that the turning of the pendulum is due to the influence of the sun. The whole thing, he concludes, "is the veriest nonsense, and later the 'scientists' will laugh at their own folly."

The earth, it is true, *seems* to be convex, but according to Teed, it is all an illusion of optics. If you take the trouble to extend a horizontal line far enough, you will always encounter the earth's *upward* curvature. Such an experiment was actually carried out in 1897 by the Koreshan Geodetic Staff, on the Gulf Coast of Florida. There are photographs in later editions of the book showing this distinguished group of bearded scientists at work. Using a set of three double T-squares—Teed calls the device a "rectilineator"—they extended a straight line for four miles along the coast only to have it plunge finally into the sea. Similar experiments had been conducted the previous year on the surface of the Old Illinois Drainage Canal.

Like most pseudo-scientists, who wish to impress the reader with their vast scientific knowledge, Teed has a tendency to let his words carry him into obscurities sometimes hard to follow. Planets, for example, are "spheres of substance aggregated through the impact of afferent and efferent fluxions of essence. . . ." And comets are nothing less than "composed of cruosic 'force,' caused by condensation of substance through the dissipation of the coloric substance at the opening of the electro-magnetic circuits, which closes the conduits of solar and lunar 'energy.'"

Teed's paranoia emerges unmistakably in the bitterness with which he attacks "orthodox" scientists as "humbugs" and "quacks," who "palm off" their work as science on a "credulous public." An entire chapter is devoted to the "unreasonable opposition" and "stubborn resistance" of his enemies. He likens himself (as does almost every pseudo-scientist) to the great innovators of the past who found it difficult to get their views accepted. "The opposition to our work today is as unreasonable, absurd, and idiotic as that manifested against the work of Harvey and Galileo."

On another page: "We have devoted much energy and effort to bring the question of Koreshan Universology permanently before the

people for public discussion. In this effort we have been held up to insolent ridicule and most bitter persecution, consonant with the invariable rule to which every innovation upon prevailing public sentiment is subject. . . . We have pushed our claims to a knowledge of cosmology until the advocates of the spurious 'sciences' begin to feel their insecurity. . . ."

And here is his most shocking and revealing declaration. ". . . to know of the earth's concavity . . . is to know God, while to believe in the earth's convexity is to deny Him and all his works. All that is opposed to Koreshanity is antichrist."

It was not surprising that Teed considered himself a messiah. Nor was it surprising that his medical practice in Utica, where he became known as the "crazy doctor," declined rapidly. His wife, confused and ill, left him (his only child, Douglas Teed, later became a prominent southern artist and portrait painter). Finally "Cyrus the Messenger," as he called himself in those days, abandoned medicine entirely and took to the road to preach his new revelation.

As an orator, he must have been magnificent. In Chicago, he attracted such a devoted following that he settled there in 1886, founding a "College of Life" and a periodical called *The Guiding Star* (soon succeeded by *The Flaming Sword*). Later he established Koreshan Unity, a small communal society housed in a building on Cottage Grove Avenue. *The Chicago Herald*, in 1894, credited him with 4,000 followers and said he had collected \$60,000 from preaching engagements in California alone.

The paper described Koresh as "an undersized, smooth-shaven man of 54 whose brown, restless eyes glow and burn like live coals. . . . He exerts a strange mesmerizing influence over his converts, particularly the other sex." In later years, he always wore a Prince Albert coat, black trousers, flowing white silk bow tie, and wide-brimmed black felt hat. Three out of four of his followers were women.

In Carl Carmer's book, *Dark Trees to the Wind*, 1949, there is an excellent chapter on Koreshanity which contains the testimony of one of its members about how he became converted to the movement. The testimony suggests that a desire to return to the womb may have played a considerable role in the cult's success. The man had been a barber in Chicago's Sherman Hotel. One day in 1900, when he was walking down State Street, his eye caught a huge sign which read,

"We live inside." A man was speaking to a small street crowd and selling copies of *The Flaming Sword*. The barber bought a copy. "I read it in bed that night," he said. "Before I went to sleep—I was inside."

In the 1890's, Koresh obtained a tract of land about 16 miles south of Fort Meyers, Florida, where he founded the town of Estero. He called it "The New Jerusalem" and predicted it would some day be the capital of the world. Arrangements were made to accommodate eight million believers. Two hundred arrived. But they did manage to keep the colony going, in spite of ridicule from nearby newspapers.

Teed's death in 1908—resulting from a personal assault by the Marshal of Fort Meyers—was embarrassing. He had written a book called *The Immortal Manhood* in which he taught that after his "physical death," he would rise and take to heaven all the followers who had been faithful. When he died, on December 22, members of the colony stopped working and kept a constant prayer vigil over the body. After two days, Koresh began to show signs of corruption. Christmas came and went. The county health officer finally stepped in and ordered a burial.

Teed's followers buried their beloved leader in a concrete tomb on Estero Island, off the Gulf Coast. In 1921, a tropical hurricane pounded the island with giant waves that carried off the tomb. No trace of the body was ever found.

The cult's handsome little magazine, *The Flaming Sword*, made no mention of Teed's death in 1908. It continued to be published until as late as 1949 when the colony's printing plant was destroyed by fire. A 1946 issue pointed out that Teed's alchemical views had foreshadowed the atom bomb. In 1947, only a dozen members of the cult were left. And they were wrangling over property rights.

In Germany, Teed's writings provided the basis for a cult that flourished widely in the anti-cultural climate of the Nazi movement. It was known as the *Hohlweltlehre*, or Hollow Earth Doctrine, first proclaimed by Peter Bender, a German aviator badly wounded in the First World War. Bender corresponded at length with the Koreshans until his death in a Nazi prison camp. His work is still carried on in Germany, chiefly by Karl E. Neupert whose book *Geokosmos* is the most important textbook of the cult.¹

In America, after 60 years of valiant battle, *The Flaming Sword* went down fighting. Its final issue contained an indignant article about

a picture *Life* had published of some salt flats in Utah. The picture purported to show the earth's convexity. The editors had written *Life*, explaining the mistake. *Life* had answered, but *The Flaming Sword* editors felt that the reply was evasive.

made up of solidly packed spheres, each with a diameter of one seven hundred thousand millionth part of the wave length of light. Material particles are simply bubbles of nothing, moving about in this dense, elastic, granular medium. The larger the "hole" in the medium the stronger the distortion in the otherwise normal "piling" of surrounding grains. Gravity is a pressure that results from this distortion. See his *On an Inversion of Ideas as to the Structure of the Universe*, 1902, and *The Sub-Mechanics of the Universe*, 1903, both published by Cambridge University Press.

4. Bertrand Russell, in his article, "In the Company of Cranks," *Saturday Review*, Aug. 11, 1956, writes:

Experience has taught me a technique for dealing with such people. Nowadays when I meet the Ephraim-and-Manasseh devotees I say, "I don't think you've got it quite right. I think the English are Ephraim and the Scotch are Manasseh." On this basis a pleasant and inconclusive argument becomes possible. In like manner, I counter the devotees of the Great Pyramid by adoration of the Sphinx; and the devotee of nuts by pointing out that hazelnuts and walnuts are just as deleterious as other foods and only Brazil nuts should be tolerated by the faithful. But when I was younger I had not yet acquired this technique, with the result that my contacts with cranks were sometimes alarming.

CHAPTER 2

Readers interested in learning more about Voliva may consult the following two articles: "Croesus at the Altar," by Alfred Prowitt, *American Mercury*, April, 1930, and "They Call Me a Flathead," by Walter Davenport, *Colliers*, May 14, 1927.

For historical background on Symmes' hollow earth see "Symmes' Theory," by John W. Peck, *Ohio Archeological Historical Publications*, Vol. 18, 1909, p. 28; "The Theory of Concentric Spheres," by William M. Miller, *Isis*, Vol. 33, 1941, p. 507; and "The Theory of Concentric Spheres," by Conway Zirkle, *Isis*, Vol. 34, July, 1947.

It is interesting to note that Teed was the author of a novel about the future. It was published posthumously by his followers in 1909 under the title, *The Great Red Dragon; or, The Flaming Devil of the Orient*, and bearing the pseudonym of Lord Chester.

Teed's hollow earth, or a theory very similar to it, has been taken up by Duran Navarro, a Buenos Aires lawyer. According to a story

in *Time*, July 14, 1947, Navarro contends that gravity is really centrifugal force generated by a rotating hollow earth inhabited on the inside. The force naturally diminishes as you move away from the surface toward the central point where protons and electrons come together to form "fotons" that in turn produce the sun. Simultaneously with Navarro's announcement, *Time* adds, comes news from Berlin that the earth does not rotate from west to east. An accountant named Valentin Herz has proved that it really rotates the opposite way.

It was also in Germany that pseudo-science recently took a drubbing. A West German patent attorney, Godfried Bueren, boldly offered 25,000 marks (about \$6,000) to anyone who could disprove his hollow sun theory. According to Herr Bueren, the sun's flaming outer shell surrounds a cool inner sphere. Covered with vegetation, the dark core can be glimpsed occasionally through sunspots which are nothing more than temporary rents in the blazing shell. The German Astronomical Society carefully ripped the theory apart and when Bueren refused to pay, the society took legal action. Incredible as it may seem, the court decided in favor of the astronomers. Herr Bueren was ordered to pay the sum he had offered, plus court costs and interest. See *Time*, Feb. 23, 1953.

Notes

1. For further details concerning the German cult and other hollow earth theories see Willy Ley's "The Hollow Earth," *Galaxy*, March, 1956.

CHAPTER 3

Velikovsky's second book, *Ages in Chaos*, Vol. I, 1952, is a drastic revision of ancient Hebrew and Egyptian history to make it conform to the author's interpretation of the *Old Testament*. Velikovsky's historical method, as reviewer William Albright observed (*N. Y. Herald Tribune Book Review*, April 20, 1952), is on a level with that of the professor who identified Moses with Middlebury by dropping the "-oses" and adding "-iddlebury."