

THE TALE OF VELIKOVSKY'S COMET

WORLDS IN COLLISION. By Immanuel Velikovsky. 401 pp. New York: The Macmillan Company. \$4.50.

By WALDEMAR KAEMPFERT

PRIMITIVE people interpret a cataclysm, such as an earthquake of exceptional violence, a hurricane that destroys whole villages, a volcanic eruption that buries a countryside in ashes and lava, in much the same animistic and symbolic terms. So it is with the cults and mythologies of tribes separated by oceans and continents.

In his highly and deliberately controversial "Worlds in Collision," Immanuel Velikovsky, doctor and psychoanalyst (see interview, page 12), takes issue with this well-established view of cultural anthropologists and also with the views of astronomers. To him the terrible disasters described in Exodus and other ancient religious texts and traditions of the Orient and Occident refer not to local, separate and similar disasters but to a single overwhelming disaster world-wide in extent.

He is not at all disturbed by a gap of a thousand years that often yawns between a tale handed down from ancient China, Babylonia or Egypt and another like it from pre-Columbian Mexico. Moreover, the ancient traditions are to be taken literally. Joshua's command "Sun, stand thou still upon Gibeon, and thou Moon in the valley of Ajalon" is to be accepted as we accept a newspaper report of a Mississippi flood that inundates whole counties. The sun and moon did stand still, whatever mathematical astronomers may have proved about the mechanics of the solar system.

THE supposedly common cataclysm that overwhelmed the world was nothing else than the perilously close approach of a colossal comet about 1500 B. C., Dr. Velikovsky holds. That comet sprang from the planet Jupiter. It was different from all others. Its mass was enormous—only a little less than the earth's. As it dashed through the solar system it wrought havoc. It approached the earth twice at intervals of fifty-two years (Dr. Velikovsky has everything neatly figured out), and it was on its second approach that Joshua thundered his command. Mars also went on a rampage centuries later—specifically in 747 B. C. and 687 B. C.—and ultimately tamed the disturber.

What became of that comet? It is now the planet Venus.

To support this incredible thesis Dr. Velikovsky swamps his readers with a Niagara of purely literary "proof." No matter how improbable a speculation or a deduction of his may be, he shores it up with a footnote that refers to some treatise. A casual ancient refer-

ence to a meteoric shower, a rain of red dust, a terrific flash of lightning is snapped up as relevant evidence.

A Controversial View of How Joshua Made the Moon and Sun Stand Still



"Watcher of the Skies."

From a painting by D. Owen Stephens

ence to a meteoric shower, a rain of red dust, a terrific flash of lightning is snapped up as relevant evidence.

It is impossible to present in a review of reasonable length either an adequate summary of Dr. Velikovsky's argument or to discuss the physical reasons why it must be regarded as one of the most remarkable farragoes ever concocted. It is enough for our present purpose to point out that the fate of the earth, if it were ever approached by another body, has been intensively studied by able mathematicians. One of these was the Frenchman, Edouard Roche. In 1848 he developed what is known as Roche's limit. Roche calculated that a satellite which approaches within a dis-

tance of 2.44 times a parent planet's radius will be torn to pieces by tidal forces. Corroborative evidence is found in Saturn's rings. These are fragments of a former satellite that came within Roche's limit.

Dr. Velikovsky never tells us in miles or in terms of the earth's radius how close came the comet that he now asserts to be Venus. That distance could not have been far from Roche's limit; for, according to Dr. Velikovsky, the head of the comet "broke through the gaseous envelope" and "the last night in Egypt was bright as the noon on the day of the summer solstice." There can be no doubt that the comet would have been broken into pieces by the

effect of gravitational forces on portions of unequal density, so that it never could have become Venus. The earth, too, would probably have suffered.

THE awful proximity of the comet must have brought about a series of catastrophes, any one of which was enough to blot out all life. Lunar and earthly mountains toppled. There were colossal avalanches. On the earth cracks opened into which cities must have disappeared. Terrible earthquakes shook all the continents. New volcanoes, spewing rivers of lava, were thrust up. Huge rocks (meteorites) rained down, some of them a mile in diameter or more. In fact the sky was aflame with them because they were heated to incandescence by friction with our atmosphere. Forests burned up. Oceans boiled, and steaming tidal waves, miles high, swept over all continents. No eye-witness could have survived to hand down any account for Dr. Velikovsky to write about. Yet Dr. Velikovsky would have us believe that many fortunate men did live through this inferno and other infernos that followed frequent and close approaches of runaway Mars.

If Venus did not become a planet until 1500 B. C., and therefore in historic times, ancient records should bear out Dr. Velikovsky. He maintains that they do and misinterprets them by the score to prove that once there was no Venus. The rising and setting of the planet was recorded systematically in the reign of King Ammizaduga, who ruled Babylonia in the sixteenth century B. C., and priestly astrologers undoubtedly observed Venus generations before. The records are discussed by Langdon and Fotheringham in "The Venus Tablet of Ammizaduga, a Solution of Babylonian Chronology by Means of the Venus Observations of the First Dynasty."

Dr. Velikovsky refers to these Venus tablets in a footnote but does not indicate their content. In fact systematic observations of Venus are at least as old as 3000 B. C. Ancient Babylonians and Egyptian watchers of the skies saw the planet exactly as we see it. Whatever Dr. Velikovsky may maintain to the contrary, the Surya-Siddhanta, earliest of known Hindu astronomical works, refers to Mercury, Venus, Mars, Jupiter and Saturn, the five planets known to the Greeks, Romans and medieval Europeans.

LIKE all comets the one that encountered the earth about 1500 B. C., according to the Velikovskian system of astronomy, had a tail, and like all cometary tails this one was composed largely of hydrogen and carbon. Hydrogen and carbon can combine chemically to form hydrocarbons. Hydrocarbons suggest pe- (Continued on Page 16)

of gulls,
 came on a golden morning in
 December:
 now softened the rocks, snow
 rounded the bony hulls
 wrecks at the harbor's mouth,
 snow smothered the shells.
 was warm—less with the memory
 of September
 an with May's promise mysterious
 in the air:
 e sat on a log of driftwood, facing
 the water,
 and opened our hearts—in turn laid
 out the wares
 years to consider, explored our
 half-known selves;
 e moved in a world as delicate
 as flowers.
 thoughts interlaced like arcs of sea-
 gulls, white
 the air around us, flying the
 breathless curves
 soon erased, the patterns of their
 flight
 ore real than the element which
 they informed.
 e saw the dazzling shore, the
 peacock water,
 ard the cold waves unroll, draw
 back and rest—
 and knew they were less true than
 where we wandered—
 enter explorers, by summer briefly
 blessed.

Evelyn Ames, in *The American Scholar* (Spring Issue).

From "Xaipe"

Q many selves (so many fiends
 and gods
 ch-greedy than every) is a man
 easily one in another hides;
 t man can, being all, escape from
 none)

huge a tumult is the simplest
 wish:
 pitiless a massacre the hope
 ost innocent (so deep's the mind
 of flesh
 d so awake what waking calls
 asleep)

never is most lonely man alone
 s briefest breathing lives some
 planet's year,
 longest life's a heartbeat of
 some sun;
 least unmotion roams the
 youngest star)

Why should a fool that calls him
 "I" presume
 comprehend not numerable whom?

E. E. Cummings, in "Xaipe"
 (Harvard University Press).

Beauty Bare

WHOSE closed eyes find the
 Face of God
 In patient prayer,
 as looked, as Euclid never could,
 On Beauty bare.

Sister Miriam, in "Woven of the



SPEAKING OF BOOKS

By J. DONALD ADAMS

THIS whole question of communication, about which I have recently been writing, is only beginning to get the attention it deserves. Whether narrowed to the relationship between writer and reader or viewed in its wider aspects, embracing all the media for the exchange of thought and emotion, there is no doubt that it has become one of the most important questions of our period. I have just been reading an editorial in the current *American Scholar* which called attention to one of its most significant aspects.

The editorial reminds us that our thinking about the art of communication has so far rested on a comfortable assumption which, in the light of recent developments, we must now critically examine. The first great achievement in that art was, of course, the invention of writing. Further developments brought next the invention of printing, then the wireless and the movie, and now television. "Since the invention of writing," the editorial points out, "was one of the most important of those propulsive forces which transmuted barbarism into civilization, we have assumed, rather uncritically, that each new technical advance in communication must have as creative a relation to the cultural development of mankind as the first."

BUT, as we have begun to ask, does this necessarily follow? We find ourselves faced by the fact that "Each new development in the art of communication seems to have broadened the base of culture on the one hand and to have vulgarized the arts on the other." The advent of television has created new grounds for apprehension; we have become aware of an important difference between the limitations imposed upon art by the movies, and those imposed by television. We know

that the vulgarization of art in the former is not produced by limitations in the medium itself. "They stem rather from the effort of a mass medium to hold a mass audience by gauging its appeal to the lowest common denominator of aesthetic receptivity."

WE know that television is technically in its infancy and that some, at least, of its limitations may be removed by further developments. But so far, at least, the appeal to the eye and the concentration on a mass audience seems to be even more accentuated in television than it has been in either the movies or the radio. The editorial observes that the content and form of discussion on television is on a lower level than in the radio, that visual aids are introduced into the discussion even when they are only slightly relevant, and that discussion topics seem to be chosen not because they are important but because they lend themselves to visual elaboration. Visual effects seem to be regarded as more important than the content of the discussion.

In answer to the objection that these apprehensions may seem to be dictated by a too aristocratic concept of culture—one which overlooks the benefits that may be conferred by mass communication—the *American Scholar* remarks that "one must also consider the degree to which the 'common men' of every age have an unspoiled art and a simple culture, upon which the artificialities and sentimentalities of the mass media may have a deleterious effect. Pretending to serve hypothetical mass tastes, they actually contaminate them. Furthermore, the mass media of the present day tend to destroy the inner core of a cultural discipline by

their too frantic efforts at popularization. Even a democratic culture cannot afford an equalitarianism which threatens the sources of discipline of the mind and heart by trying to bring them down to the lowest common denominator."

In all the arts, it would seem, whether they rest on a visual or an auditory basis, we are confronted by the equally vicious extremes represented by those who would make communication too difficult and those who would make it too easy. One of my correspondents, Mr. Ray Bethers, who has written one of the best introductory books on art appreciation that I know—"Pictures, Painters and You"—has something to say in a letter about the popular picture books with which we are being deluged, that applies in a general way to the whole matter of too easy communication.

OF the picture books, he remarks that the communication is "too good." Being on such a dead level, "everyone gets the same meaning, with no possibility of going further on one's own. The participation of the observer is controlled and restricted, much as in advertising pictures or comic strips. Words can have an abstract meaning which add up to more than the parts, and pictures in their own way can do the same. But this use of pictures, it seems to me, is like notes of music arranged to copy nature sounds, with no spirit of feeling in them."

So far as the picture books themselves are concerned, this is, perhaps, to take them too seriously. They make no pretense, after all, to being other than what they are. And what they really are, as Mr. Clarence Barnes, the compiler of the "Zoo" books himself observes, is "cartoon books in a slightly new form."

to be answered in one sense or the other; one could imagine both might be correct, in that a certain abandonment reaching to the point of forgetfulness could constitute the first step to new insights, as though the shift were to a higher plane of life, where a ripier, larger awareness, a seeing with rested, fresh eyes, then begin. To remain in forgetfulness would of course be entirely wrong. I believe that many people often give nothing but a comfortable abandonment to those arts that strongly overwhelm (music, for example); indeed it is this, I fear, that most people really understand by the "enjoyment" of art, a laziness at the expense of those abundancies that are effective in the work of art: here begins the comical misunderstanding of the worthy citizen who promptly settles down where he sees more has been achieved than he understands.

From "Letters of Rainer Maria Rilke," Vol. II, 1910-1926. Translated by Jane Barnard Greene and M. D. Herter Norton. (W. W. Norton & Co.)

Not Going

ONE of the delights known to age and beyond the grasp of youth is that of *Not Going*. When we are young it is almost agony not to go. We feel we are being left out of life, that the whole wonderful procession is sweeping by, probably forever, while we are weeping or sulking behind bars. Not to have an invitation—for the dance, the party, the match, the picnic, the excursion, the gang on holiday—is to be diminished, perhaps kept at midget's height for years. To have an invitation and then not to be able to go—oh cursed spite! Thus we torment ourselves in the April of our time. Now in my early November not only do I not care the rottenest fig whether I receive an invitation or not, but after having carelessly accepted the invitation, I can find delight in knowing that I am *Not Going*. I arrived at this by two stages. At the first, after years of illusion, I finally decided I was missing nothing by not going. Now, at the second and, I hope, final stage, I stay away and no longer care whether I am missing anything or not. But don't I like to enjoy myself?

J. B. Priestley, in "Delight." (Harper & Brothers.)

Personal Affairs

OUR personal affairs are not really worthy, as Plato said, of our consideration; the fact that we are forced to take them seriously (as I was forced to run after my hat when it did blow off today), being, as he said, the ignoble part of our condition.

Logan Pearsall Smith, in "Al Trivia" (Harcourt, Brace & Co.)

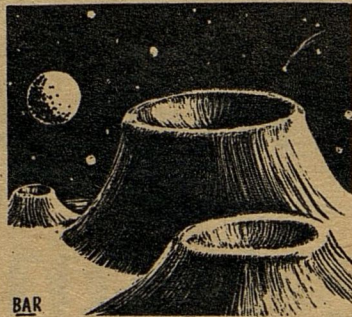
The Tale of Velikovsky's Comet 2

(Continued from Page 1)

roleum. It follows in Dr. Velikovsky's fantastic reconstruction of ancient astronomy that when his comet lost its tail petroleum poured down in torrents, which accounts for most of our oil deposits. He also assures us that Venus is drenched in petroleum vapors.

If there were terrestrial survivors of the encounter with the comet they were doomed to starve, inasmuch as all plant and animal life had been destroyed. Dr. Velikovsky comes to their rescue with a chemical miracle. Hydrogen and carbon can form not only petroleum but also carbohydrates, such as sugar. How a comet's tail at one period can shed oil and at another a sugary compound is not explained. Yet according to Velikovsky's dispensation the comet's tail mercifully showered the earth in the nick of time with the manna of the Bible and the ambrosia of the Greeks. Rivers ran with milky, sugary food.

How did the comet change into the planet Venus? The transformation "began on contact with the earth in the middle of the second millennium before the present era and was carried a step further one jubilee period later." From the tenth to the eighth century Venus was still a comet. Mars saved the earth by



colliding with Venus—an act of salvation that seems improbable, considering the small mass of Mars.

Of more importance in saving the earth were violent and incessant electrical discharges between the atmospheres of Mars, the comet and the earth. "When the tidal waves rose to their highest point and the seas were torn apart a tremendous spark flew between the earth and the comet, which instantly pushed down the miles-high billows." Velikovsky admits that in modern times no such discharges have been observed. The earth passed through the tail of Halley's comet in the present century, and no electrical effects were noted.

Like all rotating celestial bodies the earth is a magnet. The sun is a still bigger magnet. The magnetic fields of such bodies are of importance in Velikovsky's private cosmogony. To him magnetic and

electromagnetic forces keep planets on their courses, with some incidental aid from gravitation. He thinks in this way because the forces within the atom are entirely electrical, and he sees no reason why we should distinguish between the structure of an atom and the structure of the solar system. Electrons leap from orbit to orbit in an atom and in so doing either absorb or emit energy in the form of radiation. In the solar system planets leap from old to new orbits, once in a thousand years or so, as the earth, Venus and Mars supposedly did. No scientific reason is given for this extension of the electrical theory of the atom to a solar system in which gravitation is demonstrably the predominating force.

In effect Dr. Velikovsky asks us to dismiss Newton's laws of gravitation as the vaporings of a sick mind, reject the whole doctrine of evolution as it was developed by Darwin and his successors, rewrite every textbook on astronomy, biology, geology, cultural anthropology and ancient history. Were it not that it took years to compile and collate hundreds of citations and footnotes, a critical reader might well wonder if this quasi-erudite outpouring is not an elaborate hoax designed to fool scientists and historians.

A Second Treasury of the Familiar

Edited by RALPH L. WOODS

Remember the first TREASURY—that perfect bedside, fireside, campside, snuggle-in-your-favorite-chair book? In response to many requests, Editor Woods has now compiled a second book of beloved favorites. And so here is *A Second Treasury*—an entirely new selection and even better than the first!

Here is a rich cargo of poems, songs, speeches, ballads, scenes from plays, famous editorials—old familiar selections that haunt your memory and that you wish you could re-discover. Words fail to convey the pleasure you'll get from this treasury of literary wealth—almost 700 pages conveniently indexed by authors, titles, and familiar lines. For everybody, young or old!

\$5.00

Who said it?

1. Let dogs delight to bark and bite

For God hath made them so . . .

2. A little group of willful men, representing no opinion but their own, have rendered the great Government of the United States helpless and contemptible.