

REHEARSAL FOR DOOMSDAY

(The Big Bad Bombs of Bikini)

By FRANK W. PRESTON

The present heavens and earth are reserved for destruction by fire.

II Peter 3: 7.

The heavens will pass away with a great noise, and the elements melt with the terrific heat: the earth and the works of man therein shall be burned up.

II Peter 3: 10.

These are melted into air, into thin air: the cloud-capped towers, the gorgeous palaces, The solemn temples, the great globe itself
Yea, all which it inherit, shall dissolve
And . . . leave not a wrack behind.

Shakespeare: *The Tempest*: IV. I.

Man is mortal, and knows that he is mortal. This is the bitter fruit of the tree of knowledge that drove man out of Eden: he found himself naked and defenseless in the presence of death. The shadow of death has hung over him ever since, and the consciousness of that shadow—a consciousness not shared by any other creature—is what makes him man.

All civilizations are based ultimately on the realization of this mortality: it permeates all their thinking and all their imagery. It is the stimulus of their best poetry, their best drama, and most of their other arts: above all it is the basis of their religions and their cosmogonies. It passes below the threshold of consciousness, and colors and dominates all our activities, including those in which the thought of death is seemingly far from us.

Spengler is probably correct in his brief categorical assertion¹ that all modern science is no more than a dissection of the pre-existing religious beliefs of the western world. It may seem a far cry from the dispassionate study of some utilitarian technological problem, such as the behavior of molten glass in its furnace, to the basic tenets of the Jewish and Christian theologies; but historically the connection is there, and it is not remote psychologically.

In the Arabian and Western World at least, the imminence of personal death is much mixed up with ideas about the end of the physical world and of the human race in its entirety. So far as the individual is concerned, the physical world comes to an end when he ceases to have any knowledge of it, that is, at his own death. Thus in one deep religious sense, death is the end of the world. But Western civilization, and the adjoining civilization of the Near East, have never been satisfied to identify themselves with the universe in that fashion. For us, the universe is something external, that persists independently of us; but since we are mortal, the universe must be mortal too, for we see it in our own likeness; and so the End of the Earth has engrossed the thoughts and imaginations of all generations.

According to Moses and his tutors, it nearly came about once by water, in Noah's heavy rainfall. Moses promised that it would not come that way again, and by the time of the early Roman Empire, the Near East had satisfied itself that it would come by fire. Peter and John are agreed on the point, and so is Paul, and vir-

¹Oswald Spengler: *The Decline of the West*. Alfred A. Knopf, New York.

tually all the poets and dramatists of later years have concurred.

Now enters sceptical science, prepared circumspectly to dissect the accepted religious beliefs of the Western World. The second law of thermodynamics, applied on a cosmic scale (whereon it becomes little more than surmise or speculation), seems to guarantee that the universe must ultimately perish not of heat, but of cold. Everything is finally going to be at the same temperature, and that temperature is going to be very close to absolute zero, which is much worse even than a Western Pennsylvania winter.

This scientific "belief" was certainly the orthodox scientific view towards the end of the nineteenth century, and probably it still is, though it may not be held with quite so firm a conviction. It had its psychological advantages in emphasizing the difference of opinion between science and religion. Peter said categorically that the world was going to perish in a terrific fire: Kelvin and his contemporaries proved that logically the universe must perish by refrigeration.

Of course, while this destiny was inevitable for the universe as a whole, it might not be the destiny of that insignificant tiny speck that is our planet. It might be possible to vaporize the earth at an early date, while still leaving the universe to "run down hill" to thermodynamic zero. The earth might be roasted to a crisp or a vapor, for instance, if the sun became a nova, or if another star came sailing into collision with it, or if an oversized meteor crashed into the earth itself. There might be other simple astronomical setups to save Peter's face without in any way discrediting Kelvin.

But on one point the fathers of the church and the children of science were agreed without knowing it: man wasn't going to have any say in the matter. To Peter and his followers it was going to be a supernatural event, a direct intervention of the deity. To the physicists and astronomers it was going to be a purely natural event, the blind operation of the forces of nature. None of them figured on the possibility that it was going to be a purely artificial event, financed by the U. S. government.

Suggestions have been made that the rehearsal might turn into the big event itself: some have feared that the chain reaction, intended to be confined to the material of the bomb itself, might spread to the water of the ocean or the gases of the atmosphere. This possibility the best authorities deny. Others suggest that the concussion may

set off an earthquake, and split the earth's crust with a great rift valley, miles deep and a few feet wide. This in turn would expose some of the earth's interior heat to the waters of the ocean, and generate a lot of steam in a hurry. But earthquakes have happened before, and the world has not been burnt to a crisp.

The danger most generally apprehended lies not in the physics of the rehearsal but in the psychological aspects. Small boys like to destroy things: show them how, or let them accidentally find out how, and they will enjoy themselves thoroughly in exploiting their knowledge. A large part of the human race are overgrown small boys.

Men have been destroying their environment ever since they have been men; they decimate or exterminate the wild-life, cut down or burn the forests, wear out the soil or wash it down the rivers or bury it by strip-mining, turn the streams into sewage, turn the blue-sky black with smoke, foul the seas with oil or radio-active by-products, and raise Cain generally; and he who does the most damage excites the greatest popular admiration.

Now comes nuclear energy to our hand, and all the devastations of the Mongols or the Nazis can be outdistanced by any swaggering swashbuckler with a few atoms at his disposal. Cities can be wiped out at a cost of a few dollars ("few," that is, as New Dealers reckon dollars) and there is reason to hope the price can be substantially reduced in the future. We have not yet reached the point of being able to wipe out the countryside also at an economical figure, but that is because countryside is cheap. It is, however, not beyond belief that further knowledge of nuclear physics may permit us to wipe out uninhabited forest, swamp, or desert at a modest cost,

and perhaps thus to sear to the state of a lunar landscape whole countries or even continents. It will be sad to see harmless creatures like hyaenas and crocodiles going the same way as professors and the dwellers in large cities, but we have to face that possibility.

Once we understand thoroughly the way nuclear energy works, we may find that our powers of destruction extend beyond our own planet. We may be able to tinker with the nuclear processes going on in the sun, for instance. It would not require much stoking of the solar fires to raise the temperature of the earth's surface another 20°C. If this were done for a couple of weeks at midsummer, most of the earth's population would be dead of heat-stroke and whole continents burnt to a lifeless waste. Surely that is not too much to hope for, in some distant war. It would not be sufficient to fulfill Peter's prophecy of the elements themselves melting with fervent heat, but it might be sufficient to bring the human race to an end.

Such a roasting, done thoroughly, and perhaps kept up for six months so as to catch both northern and southern hemispheres, would destroy all life, vegetable and animal, on dry land, and probably most of that in the seas. We might be left with some such fauna as we had five hundred million years ago at the beginning of the Cambrian. Then evolution can start from scratch and may perhaps do a better job the next time.

This will not satisfy the he-men. They will demand no half-measures. Gentle grillings are not for them. They will demand the kind of roasting that Peter foresaw, the planet vanishing in thin air as Shakespeare prophesied. It may become possible to satisfy them.