

BLUNDER

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THERE IS NO RECORD OF THE exact date. It was probably a morning in late May, or possibly in early June, when Carl Everson and Hugh Dunn rode up from the abandoned nickel mine on its creaky hoist and stood with their hands over their eyes, spreading their fingers apart slowly, to become accustomed to the outdoor brilliance. Late May or early June—since this was the latitude of the “midnight sun” and there had been no dark. Around the two men was an enormous clearing which stretched from a solid wall of spruces to boulders fringing the polar ocean; an expanse of weeds, birches, wild grass and young conifers gradually obliterating a village near the mine and steadily overgrowing high, rusty cones of tailings.

Everson and Dunn had invested their life savings here. The region suited their needs: a mine in hard rock, deep enough, with extensive lateral galleries, close to the sea. Here, moreover, on a Pole-facing promontory of the North Cape, was utter isolation—necessary because some risk was involved in their work and they did not wish to endanger human beings. Indeed, the harming of a person would have ruined their purpose, which was essentially as commercial as it was scientific.

Carl Everson held the Chair of Physics in the Oslo Institute; Hugh Dunn was Dean of Engineering at Glasgow, and a Nobel Laureate, besides. The scheme on which

they had long plotted together was ingenious and, basically, quite simple.

It depended upon two facts. First, that volcanic phenomena are radioactive in nature. Second, that certain types—the steam-producing types—are usable as a power source: at least one Italian city had drawn its electricity from steam that gushed out of a volcanic vent, since the 1920s. Everson and Dunn intended to disintegrate a bismuth “bomb” in the mine gallery in such a way as to start a slow, hot, atomic chain reaction. The process, according to their calculations, would not “burn out” for centuries and conjunction of the sea would guarantee production of superheated steam which, they believed, could be “harnessed.” As owners of such a source, the two scientists knew that they could furnish to all of northern Scandinavia, and much of Finland, extremely cheap electrical power. In doing so, they would make their fortunes.

The venture had one unfavorable aspect: research in physics was sequestered by individual national governments. For many years, new information had been released only after the security authorities in the “nation-of-discovery” had assured themselves it was no longer, actually, “new.” Thus, scientific advances made in Britain, Russia, America, China and elsewhere were not always added to the body of common human knowledge but often retained as “military secrets.” Owing to that situation, Everson and Dunn had long argued the wisdom of carrying out their plan.

“Bismuth fission,” the Norwegian had often said, “is something new under the sun. We’ll be the first to do it—maybe. We think we know what will happen. But are we sure? Evans is apparently working on it. Chandra Lalunal, at Delhi. And Stackpole. Maybe we’d better wait for their further reports. They’ve hinted at progress—”

And the Scot would generally reply, “Aye. Wait. Wait how long? For the rest of our lives? Wait until generals and statesmen decide the knowledge has leaked, or their spies have learnt it? Suppose we do fail, Carl? What then?”

“Then we’ll jointly own a big puddle of hot rock that nobody can approach for centuries.”

“Right.” The Scot would chuckle. “Right. And be the precious fools of physics, too! Well, get on with it, Carl. Fine times, these, for what they used to call a free man!”

The times. The date. It was May or early June, but the year is not on the record, either. The vague monographs concerning bismuth fission, by Evans and Lalunal and Stackpole, had been published twenty-eight years after the first appalling rainbow of transmuted mass flashed onto (and into) the barrens of New Mexico, U. S. A. The famed “atomic bomb.” So the date was a springtime later than 1973. ’Seventy-four, perhaps. Everson and Dunn had offered a questioning paper, too, in the hope of getting more data for their experiment. But it had been held up by Norwegian censorship. That it had finally been released, and was even now in print, they could not know for they had camped in solitude for some weeks.

They stood in the sunshine a moment—in the stillness—in the subarctic morning. The two men could see, now. They put out the miner’s lights on their hats and walked, quickly, through the grass, following a cable that snaked from the mine shaft.

They came to a detonator and stood over it, reluctantly: a pair of tall thoughtful men—the Scot redheaded, the Norwegian blond as glass. Good men.

“Touch it off,” the Scot said.

“I hate to.”

Dunn chuckled and rammed home the plunger. The mine shaft grunted repeatedly. Small shocks vibrated the weedy ground. A wisp of smoke—then a cloud—puffed out of the vertical bowel. The hoists dropped out of sight; the housing over it collapsed. All down the deep intestine, dynamite exploded; its sides caved in and tumbled, blocking heavily the gallery in which a mechanism the size of a piano ticked and ticked, undisturbed by the choking of exit.

“Done,” said Everson.

They strode into the forest, following a path that was the remnant of a heavy-duty highway. The trucks of

Norwegians, then Germans, then Russians, had rolled here long ago, hauling off nickel ore for the violent purposes of World War II. Everson, who was less sanguine than his colleague, contemplated a goldheaded fly that lighted on his Mackinaw. It was, he thought, a perfect creature—sterile as the northern woods, efficient as nature, germane to the region—which man had never been. Man had left the bleaching wreckage of the mine town and the corroded heaps of ore; the fly brought only a living goldness into this place, this sprucy fragrance, this green churchliness.

Their car faced south. They removed its tarpaulin and drove, swiftly, to the main road. At an inn some fifty miles from the mine, they stopped and entered the dining room. Their waitress had long, silvery braids, and she let them fall invitingly over the shoulders of Hugh Dunn while he peered at the menu. But he did not notice. Everson, finally, translated the list of dishes and did the ordering; Dunn spoke Norwegian badly. This is usually so: the citizens of the weak countries learn the tongues of the stronger. . . .

Morning in Scandinavia was afternoon in India. Chandra Lalunal neither resisted nor resented the heat; he accepted it. He sat watching garden shadows stretch across a dry lawn and listening to the spatter of a fountain. The sound should have contributed psychological coolness; it failed; it made the young man think of the mammoth humidity which seemed to be the entire substance of the day. Chandra's apartment was a unit in a file of one-story white buildings which quartered down a hill, parallel to a garden—the work of some landscape architect who had fancied the Ficus. These trees, with small leaves and great, standing tall and growing a tangle of root exposed in low, stalactite-crowded caves, all glittered alike in the hazy sunshine.

Chandra could look over their tops, here and there, at the domes and spicules of the city and the square, huge walls of the government buildings. He sat in a doorway not because there was a breeze, but in case there might

be one. Occasionally he turned a page of the newly arrived journal in his lap. It was called *The International Physical Quarterly*. Much of its text was printed not in words but in diagrams and mathematical symbols. His dark profile had a remarkable sharpness, so that, viewed from the side, it seemed akin to the keener animals. With a full-face view, however, this predatory look was overmastered by his eyes—bright, black and yet dreaming in subjective peace. His brown fingers turned another page.

The eyes glanced down, held, changed shape minutely. "Inquiries into the Binding Fractions of Bismuth," the article said. Its authors were known by reputation to the Indian: Carl Everson and Hugh Dunn. Chandra, also, had made some "inquires" into the action of bismuth. Now, his brain commenced its common, human, utterly astonishing function. Words and symbols became electrical patterns within it; these took meaning, related to apparatus in Chandra's own laboratory, represented similar pages of figures he had written, and spelled thoughts, concepts, actual experiments. An hypothesis, begun two generations before by a dead and greatly honored savant named Albert Einstein, was the starting place of the electronic panoply that informed the young man's reading mind. Chandra checked, cross-checked, opened his lips to say an unsaid word of disapproval, and presently came to the end of the monograph.

Now, he looked for some time at the gardens. Far away, the temples brayed—slat-ribbed priests riding on the bell ropes. Chandra did not notice. The Delhi plane slanted overhead, fast, quiet. He saw it—and did not see. At last he rose. He crossed the marble floor of his living room, picked up a white hand set, dialed. He asked for Lord Polt and, after a time, talked to him.

"But it may be very important," Chandra finally said. "I know it is late. But this is pressing, sir."

The other man changed his mind. Chandra presently drove his car through the heat walls and among the slow snarl of people to the government buildings.

Lord Polt wanted to get into his air-conditioned home. He wanted tea. He wanted to change his linen. He wanted

to forget the harangue he'd had that day from the leader of the Eastern Conference. He wanted to get out of the drab, damned, sweating institutional chamber where he rotted away his life. He wanted to go home to England. . . . He said all that, pushing his tall bulkiness around despairfully behind his desk, wiping his sweated forehead with a white handkerchief, envying Chandra his appearance of dryness. He finally said, "What the devil is it, son?"

Chandra put the periodical on the governor's desk. "It is this."

Lord Polt looked at it and his vexation returned. "Talk sense, Chandra, for the love of heaven! 'This'! What is it? Runes! Hieroglyphics!"

"It's got a mistake in it," Chandra said. His voice belonged to his eyes. "A quite bad mistake."

The Englishman was too deeply exasperated now and, paradoxically, too fond of the young physicist, to maintain his damp vehemence. "You'll have to do better than that, Chandra," he said slowly. "A mistake? Thousands of you birds make millions of 'em. Are you asking me to correct the papers of a couple of Oslo and Glasgow chemists? I mean—what do you want?"

"I want," Chandra answered, "to have you requisition the world network, at once. Tonight. For at least an hour. I would like to be put on the air to explain this—error in mathematics."

Lord Polt's eyes bulged. "Are you mad, son? The world—!"

"It is a most hazardous mistake. Time shouldn't be lost. There may be much time. Years. But there may be no time at all."

"Time, in the name of the Eternal, for what?"

"To prevent any accident." Chandra smiled slightly. "In the name of the Eternal, as you say, sir."

A choleric disposition was not the reason for which the Foreign Office had sent Lord Polt to India; he had brains. He said, after a moment, "See here, Chandra. If this mistake is so important, how'd the Board miss it? How does it come to be in print?"

The dark youth showed his teeth; only a man who knew

Indians well would have understood it was more than an easy smile. "There are branches of mathematics and of physical research which are pursued by a few people only. Branches which have been thoroughly investigated and abandoned, long ago. This is one. Besides—even with mathematics, it is possible to—to—"

"Dissemble?" The man's head nodded.

"—to publish papers which would mean one thing to most scientists—and a little more, perhaps, to a few others." Chandra sighed. "That is another reason why it is sad—and vain—to imagine that science can be searched, censored and deleted—like soldiers' mail."

They were silent. The Englishman used his handkerchief again. "Chandra, the heat's affected you. It would require an emergency order from London to get the world network tonight. Or any night. I couldn't ask it, to let you lecture on physics. And even if I could, whatever you want to say would have to be reviewed first by the Board. You know that. The Board is two years behind. Censoring your stuff is difficult—"

"I assure you, sir, the peril is—is of a magnitude—"

Lord Polt was annoyed again. "The devil with the peril! People in your business have gone around muttering about peril for thirty years! Send your blasted corrections through channels!"

For a long moment, the liquid Indian eyes rested upon the bright blue eyes. Dark eyes—fatigued with subjugation, fatalistic, fatal. Then Chandra said, "I'm sorry I troubled you, sir. Perhaps it isn't urgent."

The governor nodded. "You're on the ragged side. Take a week off, son. Go up in the hills. If your school president's sticky about it, phone me."

Chandra thanked him.

He went back to his apartment and sat, again in the doorway, looking at the many kinds of Ficus trees and their increasing shadows. . . .

Stackpole—Jeffry Stackpole, of Atlanta, Georgia, Harvard University, and Massachusetts Institute of Technology, now, and for a long time, far from home—learned

of the blunder in the Everson-Dunn equations from a subordinate. Stackpole was chief engineer of Plant Number 5, Chiang Kai-shek Memorial Uranium Works. His subordinate, Plummer, knocked and entered his office without waiting. He had *The International Physical Quarterly* in his hand. Plummer was fresh from the States—recently a good quarterback but now a better nuclear physicist—and what he had discovered amused him.

“Look at this, chief,” he said. “I just opened it. Dunn may have won a Nobel Prize, but he and Everson—the Oslo Everson—have sure taken a fall in bismuth-radiation-effect.”

Stackpole was young, reputation and achievements considered—forty-two. A lean man with brown eyes, bald on top; a man with big hands and feet and a big, placid voice. The kind of man to whom a stranger would talk in a bar; the kind for whom a lost old lady would look, in order to inquire the right direction. . . . He put aside a cost report. The spark in his eyes showed he was not so formal as to resent Plummer’s hasty entrance; the slight pursing of his lips, that Plummer’s statement interested him.

“Bismuth?” Stackpole repeated. “Radiation? Let’s look.”

Plummer went on enthusiastically. “They missed the proper description of k as the infinite constant under special pressure circumstances—”

“Hold on, Plum—” There was a still faint Georgia in Stackpole’s voice—“I can read, myself.”

He read. For five minutes, ten, fifteen. His long face became insensitive fixity. Plummer lost this excitement, watching, and, after a time, gasped suddenly: “You mean, Jeffry—that you think they might—?”

“They might. Who mightn’t—figuring it that way?”

“What are you going to do?” The young man’s voice was low, meager.

Stackpole closed the scientific journal. “Tell May to call my car, Plum. I’ll see the general tonight. Maybe—just maybe—this is what we’ve waited for. Maybe this one’ll convince them that they can’t keep knowledge in a lot of different pockets. Keep us in their pockets, either.

I'll see if the general will let me get through to Oslo, or Glasgow. Wherever Dunn and Everson are. And we'll plan a general announcement. Others must be catching onto the fumble—right this minute."

He put on a hat and took a raincoat from a hidden closet. There were no windows in his office: the light was indirect, the ventilation mechanical and the furnishings ultra-modern. He knew he needed a raincoat only because a small panel, set in his desktop, constantly reported the weather outside. Plummer had gone. Stackpole crossed the room, switched off the lights, and went out, also. A Chinese girl in a red dress was sitting at a desk in the anteroom.

"I sent for the car," she said.

He noticed, with the vacant acuity that accompanies crisis moods, how beautiful she was. "Thank you, May. Good night."

His long legs scissored in the scintillant corridors; his big feet fell hard on the plastic flooring. He went through the main lobby and out onto the steps. The rain hit him, then—the wind whipped his coat—lightning split his vision—thunder followed. His nerves burned with crucial fire. And with hope . . .

Now, on the shimmery black paving, the car came. But now, his mind was elsewhere—in many elsewheres, moving swiftly with a nearly simultaneous consciousness. He was on Peace Street. He was in the M. I. T. high-tension lab. He was saying goodby to a New York City girl who wouldn't marry him and go to live in China but who still said she loved him. He was glancing—just glancing—at May Tom. Cheng blew the musical horn; Stackpole went down the steps at a run.

They drove past the plant, after he'd told Cheng to go to the general's home—past the solid mile of cubic architecture that turned masses of uranium into energy for a great and growing people. The structures, seen in headlights, seen in lightning flashes, were, somehow, both critical of nature and anti-human. He tried conversation to dispel the shadows. "How are you tonight, Cheng?"

The chauffeur lifted one shoulder. "Not good, Dr. Stackpole."

"Girl trouble?"

The head shook in the murk. "Just full of nothing, Doctor. Who isn't? It is a disease people have now, I guess. A pain of emptiness. We have been afraid too long. And we cannot get used to it."

Stackpole gave up the idea of conversation. Nameless terror, or named terror, year after year: it was a world disease, all right. Better to glance away from the squat, streaming, soundless mills of Twentieth-Century man. Better to look out the car window on the other side, where, in the relatively feeble flare of lightning, the Yangtze River labored beneath a hectic wind. . . .

Chicago's Herbert Evans was the third scientist who, in the opinion of Everson and Dunn, might have contributed valuable data to the experiment in the nickel mine. It was just dawn, in Chicago, at the time the Norwegian and the Scot were taking lunch, the Indian was staring with fatigue and fatalism over his hot valley, and the Georgian was racing on his errand in central China.

Dawn pleased Evans: it was the period he usually chose to go home from work. Home, for him, was a shabby, outmoded, two-room hotel apartment where a bachelor could accumulate unanswered mail, old clothes and the patina of pipe-smoke without human rebuke or even implied protest of neater quarters. Home was not where he hung his hat, but where he tossed it—ever since he'd gone to work in the university as instructor and laboratory assistant. Work, for Evans, had then been in a stuffy roomful of hurriedly made gadgets. Down the years, that informal shop had turned into a gleaming hall where apparatus worth millions was ranged in a vast stupefying geometry.

Evans left this chamber as the sky grayed. He went down the street whistling—a chubby little man, a merry, grandpa-looking man, who wore a smile and carried his hands in his pockets. He had coffee and Danish pastry in a cheap, all-night restaurant. He walked on to his hotel,

went up in the antediluvian elevator, and found the *Review* with his morning paper, inside the door on the floor.

Naturally, he read it—as the others had—immediately. Evans could remember the life of scientists in the pre-secrecy days. People didn't leap for journals, then. Journals weren't raked clean of all sorts of data by governments, either. Scientific news was just news—and, even though the modern journals were distributed all over the world at the same time, it wasn't any advantage. For every scientist had turned into a man who snatched at crumbs.

Evans could easily remember the spirit of science before the Fear—and the old, free great who served it. He'd even talked to Einstein, once.

He lay down on his bed, fully clothed, and read. When he came to the article about bismuth, the youthfulness and rosiness went out of him. He recognized the error and he shut his eyes, thinking hard. If anybody should set up the experiment suggested here—!

What could one man do? He considered a direct call to the seat of government and knew, even while he thought of it, that the people in Washington would demur, temporize, doubt, ask for additional opinion—unwilling all the while to smash an international habit that was like hysteria carved in marble.

He was in the same predicament as Chandra. As Stackpole. Only a higher authority could act. But Evans knew one very high authority; he knew the President of the United States. For a long time, the old man lay there, wondering how it would be possible to compel the President to break through international silence and tell the whole world, immediately, not to do so-and-so; not to try this; not to set up that equipment in such-and-such a way. Tell the world—even though it meant giving up certain useful data belonging to the U. S.

Finally, Evans got up. He went to the telephone and reserved a seat on the seven o'clock to Washington. He sent word to Charlie Trent to make an appointment for him with the President that same morning. Then he began throwing old clothes—mildewed, mothy, forgotten—from the bottom drawer of a big bureau. What he found under-

neath was a shoulder holster, a revolver, a waxed box of shells.

Nobody would search him; they knew him at the White House. It was just possible—just—that, if the President didn't believe him, he could draw the gun suddenly enough and threaten him long enough to make him speak certain orders into his desk instruments. The President wouldn't believe him, he felt.

Evans smiled very sorrowfully. This rash idea would doubtless fail. Perhaps, though, its very attempt and failure would attract political interest in the obscure data in the journal. His scheme came from long ago—from his boyhood—from motion pictures about gangsters. Even the revolver was obsolete, nowadays. A museum piece. He smiled again, whimsically; broke the gun, loaded it, and before he put it in its holster, noticed with vague surprise that it had been manufactured in Worcester, Massachusetts, U. S. A. . . .

There was no Worcester any more, of course. No Massachusetts. No New England. From Lake Champlain and the Hudson River down to the Atlantic Ocean stretched what nowadays was called "The New England Wastes." In the Sahara, there are oases; here, were none.

The cities were scoured away, for the most part stone sinks, some filled with water. Wherever buildings remained, they were halved, quartered, toppled, bleached. What had not vaporized had burned or melted or blanched in a hideous heat. Nothing grew; nothing. No trees on the White Mountains and no reeds around the stale ponds. No anemone blossomed in the deepest cranny of rock. From time to time the great Connecticut River flash-flooded. The event went all unnoticed. In summer, the river was partly dry. No insects danced above it; never a trout or bass spilled its surface in climbing attack. No squatting frog croaked there, or hyla trilled. Even ducks had learned not to migrate over this immense region—and gulls, not to fly in from the sea. The lonely land eroded; the continental skeleton steadily emerged; the aspect of it grew lunar—suggesting hauntingly, horribly, that some similar catastrophe had stripped the moon of air and

pitted its ground like this; some fiend's bombardment, some deliberate boiling of the moonmen's land—a million years ago.

New England had vanished in eight minutes, during the infamous "sneak punch" of World War III, now called the "Short War"—as though man still awaited a longer. On Christmas Eve, in 1966, the rockets broke a hundred miles above, and their bomb-contents homed accurately. What they did not destroy in that infernal period was left radioactive. The thousands of survivors who drove and flew out of the holocaust also died—slowly—of leukemia, of cancer, of ray burns which ate their extremities to stumps and gradually along the stumps to vital portions.

There existed, in central Europe, another region like The New England Wastes, but larger—as large as the Ukraine. It had been created three hours after the obliteration of New England, by the answering American salvo—a blow of a strength not foreseen by the treacherous assailants; a blow that had set diplomats chattering over the international wave bands and brought armistice before morning. Armistice. Armed truce. Armed vigilance. Armed secrecy. That had lasted till this very hour. . . .

Man was stubbornly attempting to reclaim the lost domain. Even as Evans noted the legend on his revolver, the effort got under way. A prodigious machine broke over a hilltop on the edge of the Wastes. It came clanking from a woods where the leaves were fresh, flowers bloomed, bees buzzed and morning was late Maylike, or early June-like. Its caterpillar treads stamped pungency from the grass. It descended upon the barren earth, cumbersome, buglike; wherever it went, it left behind a row of planted saplings, like a harvester that worked backwards.

Inside this contrivance, protected from the radioactivity of the ground by lead shields, two men watched instruments that told how the holes were being dug, the water poured, the small trees set, the earth packed around their roots.

They were ordinary men—farmer-mechanics—and by and by they stopped to survey their accomplishment

through quartz slits. They lighted cigarettes and looked at each other.

"I bet they die, too, Ed."

"Want to put up dough, Curley?"

"Well—"

"Those birches are a new strain," Ed said. "Some professor developed 'em. They're supposed to stand twice as much rays as there is around here. Stand 'em—and grow."

"And drop seeds? And make little birches in this hell-hole?"

"There—you've got me. Let's start her up."

"Take a lot of birches," Curley said, "to cover New England. And then what have you got?" He spat over a shield, taking care not to expose his face. . . .

At the seaside inn, on the North Cape, Everson and Dunn compared watches. Their luncheon—sampled, cold—sat at their heavy elbows. In the last half hour they had scarcely communicated—and yet, each man knew that the other had reached a passionate and belated decision. A decision that the experiment was a mistake. A decision that they had acted beyond their rights; that they should have waited until they possessed all possible information concerning bismuth.

As the two watches pushed time along on the pine table, Dunn showed abrupt anger. He doubled his fist and made the dishes jump. "If this goes wrong—if this makes another shambles like New England—it's justice! It will teach the whole idiotic world that you cannot monopolize knowledge! Or own scientists! I say, Carl, we'll either be rich men, soon—or the authors of a lesson people need as badly as they need air to breathe!"

Everson only said, "Five seconds."

In the gallery of the choked mine, the piano-sized mechanism stopped ticking. For a moment—a moment in the infinite darkness—nothing happened. Then a flame sputtered. It shot shadows down the man-hewn corridor. Minerals glinted. The flame brightened. Now, lead began to melt—to dribble like pure silver onto the dust-deep floor. As it flowed, it made a flake of beryllium accessible

to particles streaking from a tube of radon. This was the first step. It took a minute or so.

New particles sprang from the beryllium into a series of sheets of pure uranium. The atoms of this substance split in two. They drove into the bismuth blocks and their containing cadmium. For a certain time, very short, the purest light surged through the cavern and became brighter than the sun. Now, as the bismuth commenced to split, the rock walls were bombarded by the three rays—alpha, beta and gamma—and by a spreading storm of atomic fragments. The light—visible light, light invisible, and light that would blind human eyes—swelled within the region, drove through the walls, and reflected, here and there, from the sleazy stuff of the world. For another, equally brief moment, the rock-jammed throat of the mine acted as a tamper. It half held in the accumulating temperatures and pressures.

The interval of compression was very short. Everson and Dunn had calculated that it would produce one new effect: As each bismuth atom divided, the additional pressure violence, swifterpaced than that of the resonance of half nuclei, would shake from each another neutron—a small, additional quantum. This, they assumed, would be the necessary “torch” to set a slow, enduring “fire” to the mineral walls; a perpetual chain reaction.

It was there that Everson and Dunn had erred: the tamper changed all resonance. The bismuth flew apart entirely. Its disintegration destroyed surrounding structures in the same fashion. The thing envisaged by Chandra Lalunal, Jeffry Stackpole and Herbert Evans now took place under the spruce forest and the sea edge. An atomic glare began to penetrate the earth and to race across the chords of it. Energy, driving up through the White Sea, boiled it, vaporized it, atomized it, broke its atoms and pushed against the ocean that might otherwise have driven toward the now empty place.

Vertical surge traversed the atmosphere and the stratosphere and broke into space. Here, cosmic particles, traveling at the velocity of a harmonic—since they were unslowed, unmuffled, by the air—destroyed certain frag-

ments in the rising plane of atomic debris. These produced the "omega ray," hypothesized and variously named by Lalunal, Stackpole and Evans. (But still on the restricted lists, while London and Washington separately cogitated its possible military value.) An atmosphere would have shielded the earth from the omega ray. But, in place of atmosphere, there was now an expanding region of disintegration, and the ray penetrated it, shattering even the crushed, abnormal atomic structures in the central globe beneath. . . .

In London, in the House of Parliament, Jeremy Hathcoat had commenced an oration on a proposal to restrict certain areas of research. One of the most brilliant orators in England's long history, he had finished a solemn period and was maturing his pace when the House of Parliament was closed forever. In Pennsylvania, in the United States, hundreds of Boy Scouts were assembling outside Philadelphia to search a deep and fragrant forest for an heiress who had been missing from her nearby mansion for three days; their excited voices, the confident instructions of their scoutmasters, the barking of dogs which were to accompany them—all these were ended. Gunner McPhey, the greatest pitcher in a decade, was enjoying an early workout in the empty ball park in Washington, D. C. He raised his left foot, circled it gracefully, and flung a ball that never smacked the catcher's mitt. In Missouri, farmers rising at the bird-chittery interval before dawn, finished their breakfasts, many of them—but few reached their stables or their fields. Few of the stay-out revelers in Hollywood, California, ever saw their homes again.

Busy afternoon for Europe—morning for South America, for Gauchos on the plains, poison-dart blowers in deep jungles, astronomers studying the sun on Andes tip—night and sleep on the Pacific. In darkened Seattle, a jealous wife approached her snoring husband, step by step, with a blade that caught the light of half a moon: a death she meant to deal was done for her and she perished, also—no murderess. To dancers in cabarets and

to lollers on beaches, to night-watchmen and men pitching hay—it came alike.

The North Polar icecap melted. The sea boiled away. The Scandinavian Peninsula cracked open. The seam ran down Europe and, in Africa, met radiance emerging there. The hot contents of the earth extruded in the north, but it was as if the molten mass emerged and was laid bare simultaneously. Of all habitable places, Tasmania last experienced the advent of energy and the accompanying transmutation of its island mass.

When the event occurred, Chandra was still sitting in his wicker chair, staring at the banyan trees with an expression of almost aggressive fatalism. He had the journal in his hand. Stackpole and his driver, Cheng, were watching a boatman fight the hard current of the storm-pounded Yangtze Kiang River. Their sight was extinguished—the boatman's hands did not even slip from the tiller as vision and thought were joined amongst the temperatures. To Evans, flying toward Washington at eight hundred miles an hour—to this oddly armed, cherubic old man—there came horrible suspicion—a presentiment that his errand would be futile. On The New England Wastes, Ed got halfway through a sentence intended to state that birches were better than nothing. Everson and Dunn, of course, were among the first victims.

If Mars had inhabitants, they certainly rejoiced, for there was created in their chilly firmament a small but profligate sun where the earth had circled, blue-green, for two billion years. A little sun that grew large—and a million times brighter than earth—and sent to them, across the reaches, additional heat and more light for their dim, red sandstone plains. To the Martians came the spectacular comfort of a new, radiant companion. If there were thoughtful creatures alive in the steaming hurricanes of Venus, they must have marveled and perhaps worried over the phenomenon: it is dangerous to be too near a sun birth. It is dangerous, when a close neighbor grows ten times its size and spurts incredible energy into space. If the Martians became glad, surely the Venutians grew anxious.

In due course, the earth's moon was engulfed and added as fuel to the atomic holocaust. *Due course*. It was not long. The atomic principle involves velocities which the average terrestrial man had not taken the trouble to understand, even at the year of his dissolution.

Indeed, the time which elapsed after the first, great light sprang from the Everson-Dunn machine, and until the earth became an expanding sphere heated to trillions of degrees, was slightly less than one-nineteenth of a second.