

# THE MIGHTY ATOM



This miles-high pillar of smoke represents all that was left of 65 percent of Hiroshima after it was hit by first U.S. atom bomb to be dropped upon Japan.

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*From it science forged the war's most fearful weapon, gave Japan the final blow and opened a new era of vast energy that can, man willing, be harnessed for peace. These six pages tell the story.*

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**T**HINK of the smallest thing you can conceive of, then divide it by two billion. That will give you an approximate idea of the size of the atom, which provides the energy for the most destructive weapon in the world, the atomic bomb.

The bombs that devastated Hiroshima and Nagasaki contained billions of atoms.

An atom consists of almost inconceivably tiny particles of electricity, negatively charged, positively charged and "neutral."

Any given amount of any "thing" consists of atoms—billions of them, like the small particles of sand on an ocean beach. Everything you see around you, everything you see or touch is made of atoms. You are, too.

Each atom is like our solar system in the smallest miniature. In the center is the sun, the nucleus. Around it revolve the planets, called electrons. But they whirl billions of times faster than our world.

Science has broken down into component parts the sun of the atom world. This nucleus is composed of a conglomeration of individual particles of two kinds, protons and neutrons. Protons are positively charged, neutrons are neutral.

The atom solar system would burst apart if there were not a force to bind it together. This force is supplied by the attraction between the one or more protons in the nucleus and the atom's electron planets, which are negatively charged.

**H**OLDING our little atom system together takes terrific energy. This energy, released, means not only the end of the atom world but, within its sphere, unimaginable pandemonium, like a minute Judgment Day. Temperatures of millions of degrees are developed. Pressures produced are far and away the most violent reactions known. Until this reaction was first discovered, human beings couldn't even conceive of such power.

The reaction depends on no chemical element for combustion; it is entirely self-sustaining. The crashing destruction continues until the entire atomic solar system breaks apart.

What happens to the exploded particles and how can this miniature cataclysm be created? Because the explosion is over so quickly—it takes place in only 1/1,000,000th of a second—the details of the reaction are hard to trace.

And bringing about this cataclysm is doubly difficult because atoms are not packed tightly together. Trying to smash just any old atom in a molecule or piece of matter would be, as Albert Einstein puts it, like trying to shoot ducks on a dark night in a section where ducks are rare. There would be millions of misses for every hit.

The component parts of the atom world are few and far between, too. Like our solar system, the atom is mostly space. The atom sun occupies only one millionth of a billionth of the atomic solar system's reaches.

If all the electronic planets and empty space were taken from the myriad of atomic solar systems that compose a 150-pound man, and only the nuclei remained, there would be left a lump no larger than a ball of buckshot.

Taking the electrons and space from this 150-

unruffled way that characterizes their country; that they had just experienced the biggest electoral upset in their history.

By a two-to-one count they had voted Winston Churchill, one of the greatest war leaders of British history, out of office in order to install a government that had pledged itself to nationalize whole sections of the country's economy and push toward the goal of socialism. Not since that remote period before Hitler had embarked on his first aggression, even before Mussolini had pitted his legions against the Ethiopians, had Britain had a national election. The result was a revelation.

**W**HATEVER its long-range significance, the election's immediate consequence was the second substitution in the cast of the Big Three. At Potsdam, on the outskirts of Berlin, the seventh of our heady headlines was in the making. What Roosevelt, Churchill and Stalin had started long ago was carried to completion by Marshal Stalin, President Truman and Britain's new Prime Minister, Clement Attlee. On August 2, after sessions of the strictest secrecy, the fate of Germany and much of Europe was announced—the decision to make Germany a third-rate industrial power, incapable of waging war, stripped of East Prussia and of large areas along the Oder, and denied a central government for an indefinite future. Equally sensational was the ultimatum issued from Potsdam to the Japanese. Terms were laid down, and for the first time the enemy had a concrete picture of what it could expect in the event of unconditional surrender. Failure to accept, it was pointed out by the American, British and Chinese governments, would mean the utter destruction of Japan.

That was only a starter for the month of August, which was to bring the wave of history to a towering crest. Before August was half over three of the biggest news stories of the war—and one of the biggest in the history of the world—had broken on a public almost immune to eight-column streamer heads and "flash" interruptions of the morning soap opera.

On August 7, a date that will probably be memorized by schoolboys for generations, the world of the future was ushered in. The power of the atom, the basic energy of the universe, had at last been harnessed to the uses of man. Its first employment was to blow 60 percent of the Japanese city of Hiroshima completely out of existence. The tiny atom promised a speedy end of the war. And, more important in the long run, it marked out alternative roads for men of the 20th century to follow: the suicide of our civilization through atomic warfare, or the salvation of that civilization through peaceful application of this monumental scientific advance.

People were still rubbing their eyes and trying to stretch their minds enough to take in the overwhelming significance of the atomic bomb when Story No. 9 crashed through. Three months from the date of the German surrender the Soviet Union entered the war in the Pacific. Long poised on the borders of Manchuria, the Red Army of the East plunged across the line from east and west, and Americans rejoiced that the Japs' crack Kwantung Army could be left to the Russians while our own forces concentrated on the enemy's jittery home islands.

**I**t seemed impossible for the war to go on for more than a matter of months, but the public was hardly prepared for the swiftness of the Japanese collapse. Early on the morning of August 10 the enemy threw in the sponge. By way of Domei, the Japanese news agency, came word that the Tokyo government was prepared to accept the Potsdam terms provided the "sovereignty" of the Emperor was left intact. Four days of uncertainty followed, days of feverish consultation in high places and tentative jubilation in places both high and low. One thing was certain: the end of the second World War was imminent. The day longed for by an entire world through six tortured years was about to dawn.

In four short months this planet had come a long way. Three figures who had dominated the news of a decade were gone—Roosevelt, Mussolini and Hitler—and a fourth, Winston Churchill, had passed from leadership of an empire to leadership of His Majesty's Loyal Opposition. Nazi Germany had been ground into the dust and its ruthless leaders either driven to suicide or brought to the prisoner's dock. The foundations for a durable world security organization



Whether or not Hitler died in Berlin made a big story but a bigger one was the German surrender on May 7.

had been laid, and the outlines drawn for a reconstructed Europe. A Labor government had swept into power in England, with possible repercussions in all the liberated countries of the Continent. And the most widespread and devastating war in history was brought to an end with the capitulation of those Japanese jingos who had threatened to fight if necessary for a hundred years. Finally, towering above even these massive events, a revolution had taken place in science, which promised in time either to make the mighty atom work for man or to destroy man and his world in another war.

After a streak like that it would not be surprising if a revulsion against "big news" should

set in. It may well be that people long to pick up a paper in which nothing more cosmic is reported than the city's reception of a visiting channel-swimmer, and nothing more violent than a tie-up on the Magnolia Avenue trolley line.

On the other hand, "big news" is a potent drug. On the day between Russia's entry into the Pacific war and the Japs' bid for peace more than one American was heard to complain that things were slow, "nothing new." For such jaded addicts nothing will do now but an extra with the eight-column streamer: MOON COLLIDES WITH EARTH AS MARTIANS CHEER—unless it fits that equally exciting head: ALL GIs DISCHARGED AS ARMY SCRAPS RED TAPE.—But let's not be fantastic.



Word came from Milan on April 28 that Mussolini and his mistress had been shot and strung up in the square.