

# LAYMAN IN A WORLD OF SCIENCE

by Alistair Cooke

The Seattle World's Fair is closing down and in its six months' existence the United States Science Pavilion has towered over every other exhibit in popularity as it does in distinction. It is as much of a pleasure to salute this single achievement at the end of the Fair as it was a pain to decry the rest of it on opening day.

It lies, happily, along the south-western edge of the Fair, away from the main architectural babel, but one appreciates its dominance best from an aeroplane: five high slender aluminium Gothic arches rising above graceful plots of buildings enclosing a court of pools punctuated by jetting fountains. The six flanking buildings are slabs of prestressed concrete of such crystalline purity that even on the dull days their reflection was as difficult to bear as Alpine snows. Their façades are evenly broken up with continuous Gothic arches used as a kind of filigree. As you come closer and are surrounded by the concrete surfaces everywhere, and the delicate and rippling interplay of light and water, arches and scintillating stone, it is as if the Gothic style had passed without a break through the Renaissance and the eighteenth century, in and out of Spain, and had achieved a final sensuous purity in the twentieth century. It is as if Venice had just been built.

This most moving pavilion is the work of Minoru Yamasaki, who was born in Seattle 49 years ago, was a humble instructor in watercolour at New York University in the depression, who then moved into architectural design, became the chief designer to Raymond Loewy, and has since been sweeping up awards across the country, most notably for the splendid new airport at St Louis.

It is not possible, you say to yourself, that this pavilion could begin to match inside the beauty of its exterior. You are wrong. For inside, five great halls using every known and some novel techniques of demonstration present a history of science designed by Raymond Loewy, George Nelson, and by Charles Eames, the Mozart of the applied sciences. The result is a single philosophical conception of remarkable majesty and disinterestedness. It can be sensed only dimly by its official definition: "To present the rôle of man in a search for truth and science." To inch towards a description only a little more adequate, it is a place designed to register the shocks of the physical universe, both terrible and exquisite, on the human mind; and to trace in sequence the attempts of men to explain and use them, from the Egyptians to Einstein and beyond.

The brilliance of this method is that it traces the history of intelligence in one whole field of human curiosity. We begin where the

primitive began, agape before huge dioramas of the elemental natural phenomena: twenty panels showing the rising and setting of the sun; a tornado; the Northern Lights; a comet; the visual splendour of the New England fall; an electrical storm; the spawning of a trout.

Next we pass through a corridor that demonstrates some sophisticated illusions of the senses. Two suns swinging back and forth into the line of vision are seen, close up, to be quite stationary, being merely inflating and deflating balloons in the same plane. A Western street scene has the houses and trees pitched at an angle uniformly sharper than 45deg. The street itself is plumb flat, but walking along it you have the sense of going both uphill and down, and you are lucky not to end in slight nausea.

So far we have experienced the natural and contrived phenomena of the world we live in. The remaining halls illustrate ways in which men have tried to explain them. Mathematics begins in Egypt with the shrewd primitive observation that three trees and three horses have some knotty thing in common, and ends with determining the temperature of a distant star. Electro-magnetics starts with Galvani's dead frog twitching in brine and ends with the behaviour of Hertzian waves. We grope our way into genetics by walking through a corridor of panels that stylise the rain forest. Inset against their proper flora are coloured motion pictures of the animals—the armadillo, the tiger, and the rest—whose wild variety baffled Darwin. This puzzle is then taken up by Mendel, first in a panel of experimental formulae and then in a winking model of his pea-plant experiment that he would have given two brown eyes to own. So we pass on to Morgan and the "crossing over" of chromosomes, and then to Muller and Beadle and Tatum, and Watson and Crick's DNA molecule, and to a final, or perhaps only provisional, generalisation: "Life is the control of increasing orders of complexity."

And so it goes, with other halls devoted to the Methods of Science, the Horizons of Science, and the Human Being. Shakespeare's image of man as a forked radish is articulated in a huge magnification of the incredibly complicated structure of a salamander's spermatozoa. It stands at the entrance of the hall that deals with the human organism and, to put it mildly, it would give pause to the most rip-roaring fundamentalist. An hour later we leave this place with a nervous backward look at a monkey embracing a comfortable artificial mother, made of terry cloth, to the denial of its food, planted in another "mother" made of scratchy wire mesh. We came in to the sound and sight of a thunderstorm and

went out pondering the connection of motherhood, food, and affection. Through the two or three hours it takes to follow this show we appreciate at last that we have been the faltering but grateful Watson to the Holmes of Galileo and Faraday and Avogadro and Chadwick and all the others.

There is one dizzy interruption to this humbling journey. It is a central hall, a circle of darkness underneath a mammoth saucer dome, which turns into the screen for a visual journey into space. The spectator first holds then clutches a rail and sees Canaveral fade away, and then the Florida peninsula and then the Americas. The ghastly moon looms up, is suddenly the whole of the sky, is about to engulf us when it veers off overhead. Leo and Virgo and Libra and Scorpius float by. The sun streams its millions of miles of flame and recedes into a cinder, as negligible as a glow-worm in the Grand Canyon. The rest of this passage through a trillion light years is a wonderful nightmare of rattling meteorites, asteroids, snarling gases, the ringed planet, the mystery of Mars, before we touch Pluto and the limit of the solar system.

At the last, this dazed layman went back to the beginning, to a beautiful curving entrance hall to the Pavilion, and watched again Charles Eames's exquisite 12-minute film—or rather nine films projected simultaneously on a composite screen—called "The House of Science." Here, from a comic animation of the first man and the first cave, the house grew into a Victorian mansion of all the modern specialities and then dissolved into a fly's-eye view of their function: the slitting of a muscle, the building of a cyclotron, the isolation of a virus, the marvel that is the eyeball of a salmon, the veins of a maple leaf.

When Handel, writing the "Messiah" through those 15 nights and days in his Dublin garret, came to the Hallelujah Chorus, he wrote that it was as if the Lord God Almighty had appeared before him. Something of this sublimity comes to the layman who, transported for an hour or two out of his single culture of the humanities, finishes the magic trek through this Pavilion. He knows he has been initiated into that humble awe before the mysteries of the universe which, until so lately, was thought to be the prerogative of the poet and the priest. And if, as he moves off into the jungle of the Fair, he looks back at Yamasaki's masterpiece, he can hardly stifle a chuckle at the thought that here and now, in the high noon of the abstractionists and the steel and glass honeycombs, one modern architect has made the blinding discovery that a Gothic arch does, after all, seem to express the aspiration of men to reach beyond the earth they live on.