



Transcribed Copy of the "Narration Track" ... House of Science (1962-63) from Exhibit Information files, Area 1, Records of the US Commission for the US Science Exhibit for the Seattle World's Fair, 1956-1963; from Record Group 43: Records of International Conferences, Commissions, and Expositions, 1825 - 1979, National Archives and Records Administration, Seattle, Washington

Much time had passed and civilization was well established before man had acquired the leisure and security necessary for philosophical contemplation. Technology was already quite developed and the existing body of information considerable. It was only then that the structure of Science and Philosophy began to emerge. As he contemplated the world around him the natural philosopher asked ... what is it made of? ... why this constant change from summer to winter ... motion to rest ... life to death? Fascinated by the success of accountants and surveyors he invented mathematical proof. Looking at the heavens and at the records of navigators and calendar makers he conceived a universe of spheres. Building on the lore of bonesetters and apothecaries the philosopher began an exploration of the human body that extended to the whole living world. Such was the House of Science ... 200 years before Christ. Greatly elaborated, first in the Roman world, then in the Islamic, this heritage was transmitted to the Medieval scientist. But great social and technological changes were rocking the Medieval world ... increased leisure, freedoms. By the time of the Renaissance the Sciences were being affected. Vesalius shocked medical tradition ... studied anatomy from human corpses. His naturalist charts of the body laid a foundation for Harvey's work on valves and veins. A revival of European mathematics later led to calculus. With an inside view to the simplicity, Copernicus reversed the positions of the earth and sun. Kepler stretched the orbits into ellipses, Galileo provided laws of motion which Newton elaborated to cover apples, cannon balls and planets. For the first time man had reason to view the universe as an infinite machine. While new ideas had been transforming the established sciences, new attitudes were producing new sciences. As learned men inspired partly by the crafts began to systematically study and record countless facts of everyday life. The marine compass led them to electricity and magnetism, Alchemy and chemical crafts to the study of chemical change, mining and fossils to Geology, drugs and herbs to Botany. Concern with human anatomy expanded to all of organic life. By the beginning of

the 19th Century, practical skills became controlled experiments and emerged with theory to produce the main branches of modern Science. With increasing vigor they themselves began to grow and subdivide. At this point, Science, a subject for the naturally curious now became intensely practical as well. It began to repay its debt to technology. With this impetus Science began the almost explosive stage of growth that we are witnessing today.

This is the House of Science as it is today. These are the men that inhabit the house ... that work in it, live in it, build it.

This is about what scientists look like and these are the places they do their work. From the outside the buildings are about as varied as the scientists themselves ... large and small, young and old. On the inside it is remarkable how many of the laboratories look exactly as a laboratory should look. Some have the glassware apparatus and tidiness of an alchemist workshop ... others have a complexity of instrumentation that is overwhelming.

These are the fields that have now become highly specialized. their instruments penetrate regions far outside human experience. But today, as in the past, a laboratory can be many things and many places. It can be a stagnate pool or the light of the sun or the sun itself. The thought of our nearest neighbor as a laboratory has now become very real and the space just beyond our earth is almost familiar territory. The atmosphere is a dense but thin coat that carries our weather and our winds. The rain it bears has molded and worked the surface of the land. The crust of the earth holds fascination and wonder for the scientist. he observes phenomenon of his own time and with equal familiarity as he investigates incidents of ages past.

It was here in the rich waters of the sea a billion years ago that the rhythms of all life were set. That all the living things we know had their beginnings.

When animals or insects or birds or men ~~who~~ live in communities then the society they form becomes a laboratory. In it can be studied the manner in which a society reacts to change ... the working of its checks and its balances, the culture and the units of which it is made. The people ... the objects they make and use are the subjects of scientific inquiry as are their means of expression, their customs and their ideas.

The mind of man can be a laboratory. A laboratory can be anywhere that the scientist is drawn to look. He scrutinizes his world of interests as carefully as his senses will allow and as his inquiry becomes more critical he seeks to extend his natural senses. The lens is a simple tool that extends the sense of sight into a realm of smaller things. The microscope does much the same but the jump to higher magnification is so spectacular it reveals another world.

The radio telescope reaches farther into space than anything that we have ever known. It explores the universe, billions of light years away. This is exploration in the same old-fashioned sense, but the environment is not always too friendly.

The sense of time can be altered by slowing the very fast or by speeding the very slow, or by catching an instant and holding it. Most sensing devices read directly as measurement. Because its accuracy often determines the quality of his data, the scientist can be very particular about measurement and the instruments that do it. By international agreement the standard of linear measurement is no longer a mark on a stick, it is now the wave of light from excited Krypton 86. Other measurements have become about as esoteric. With instruments sensing, measuring, and recording data, information accumulates at a staggering rate. A new tool the electronic computer. It can sift through, condense and relate tremendous amounts of data at such great speed that complex theories for handling information become exceeding practical. This comes close to the heart of Science ... where theories and concepts are the working tools. With a special kind of curiosity and a sense of elegance the scientist uncovers hidden relationships. From these and others he builds intellectual constructions. To help maintain the necessary perspective the scientist uses many devices. he writes himself notes ... he builds three-dimensional models to actually experience relationships. he creates different images of the same concept to see it in different ways. He writes papers, he delivers papers, he publishes and he tries his notions on his friends. It would be impossible to tell from the intensity of the discussion whether they are talking about a questionable cosmology or the proper labeling of a butterfly specimen.

Science is essentially an artistic or philosophical enterprise carried on for its own sake. In this it is more akin to play than work but it is quite a sophisticated play in which the scientists use nature as a science of interlocking puzzles. He assumes that the puzzles have a solution, that they will be fair. He holds to the faith in the underlining order of the universe. His motivation is

his fascination with the puzzle itself. His method is a curious interplay between idea and experiment. His pleasures are those of any artist. High on the list of prerequisites for being a scientist is a quality that defines the rich human being as much as it does the man of science. That is his ability and his desire to reach out with his mind and imagination to something outside himself.