SPILHAUS PROPOSAL

'Man-on-earth' program

Mankind advances by daring and imaginative steps in biology and in physics, even across space. Why then is he so timid and unimaginative when it comes to experimenting with new ways to improve his life?

This question was asked of the 40 winners and 800 guests at the awards banquet of the 27th annual Westinghouse Science Talent Search. The speaker was Dr. Athelstan Spilhaus, president of the Franklin Institute and a

Spilhaus: Man-on-earth.

noted meteorologist and oceanographer.

Noting the recent report on riots by the President's National Advisory Commission on Civil Disorders, he says the report calls for top priorities and a scale greater than the man-in-space program.

"Can't we have a 'man-on-earth' program?" he asked.

Dr. Spilhaus says that basically he agrees with the commission's basic principle of mounting immediate programs matched with the dimensions of the problems, as well as undertaking experiments to find ways to change the system. He suggests that the approach that is needed is the experimental city he has been advocating for several years.

"Their size would be controlled, keeping enough land around them to insure that there is no unplanned overgrowth. The technology of these cities would be such that the physical distresses of filth, pollution, congestion and noise would be removed.

"Without these distresses there could be no need for zoning and therefore total integration of activities—school, business, industry and home—of different kinds of people of different origins. There would be many new choices for living."

The reason most often given for not

Sherburne: Measure potential.

trying massive experiments with people, Dr. Spilhaus says, is that such experiments involve moving people. He says that under existing laws and government people in fact get "pushed around everywhere" in wars, urban renewal, and highway building. Speaking of the Talent Search scholarship awards, which recognize creativity in the sciences, he suggests a similar search to recognize those "whose creative imagination is focused on solving people problems."

Presiding at the banquet was E. G. Sherburne Jr., director of Science Service. Before introducing Robert E. Kirby, executive vice president of Westinghouse Electric Corp., Sherburne noted that academic excellence is a measure of academic excellence, and that alone. He said those who shine at school do not necessarily shine on the job, and those most productive on the job have not necessarily made a big mark in school.

Sherburne said this non-relationship is just beginning to be recognized generally by educators. He noted that for years the selection process for the Talent Search has recognized it, however, being concerned not with academic performance but with attempting to assess what kind of contribution the contestants will make professionally.

Introducing Dr. Spilhaus was Dr. Glenn T. Seaborg, chairman of the U.S. Atomic Energy Commission and president of Science Service. Following the main address the report of the judges was given by Dr. Harold A. Edgerton, president of Performance Research Inc., and chairman of the Talent Search board of judges.

Robert Guth was elected by the finalists to give their speech of thanks. Afterwards Jerome Zeldis, 17, of Levittown, N.Y., and Rochelle Epstein, 16, of Jamaica, N.Y., presented roses and a book to Dorothy Schriver, assistant director of Science Service and coordinator of the Talent Search.

THE EXHIBITS

Intellectual, not visual

Some may mourn it, but gone are the days when science fairs were replete with flashing lights, robots, and model rockets. Now the projects on display are rather dry visually.

What really was on display at the Science Talent Search exhibit was creativity, curiosity, originality.

The work of one finalist, in fact, typical in many respects, is original enough to be published in a coming issue of the British scientific journal NATURE. Keith W. Haden, 17, of Wilmington, Del., discovered that the eyes of sea turtles and swamp turtles differ, apparently because of a different set of environmental requirements.

Haden theorized that the swamp turtle, not threatened by many waterborne predators but requiring binocular vision to catch the insect food dropping from above, would be visually adapted to this mode of living. The sea turtle, on the other hand, floats at the surface looking down for predators, of which it has to be wary because it cannot retract into its shell. Thus its vision, while it need not be the accurate close-range binocular vision of the swamp turtle, must cover a wider area. Haden figured that the sea turtle's eyes would be adapted to lateral vision.

To test his theory he first decided on the area of the retina that would be most sensitive for each kind of vision. Then he studied retinas from both swamp and sea turtles. He found greater concentrations of color-sensitive retinal cones in some areas of each retina than in others. These areas corresponded with the areas predicted by his theory to be the most sensitive, supporting the theory.

Haden's was only one of 40 projects exhibiting similar careful thought and initiative. To test the ability of terrestrial organisms to survive a Martian environment, Charles Moss, 17, built a Martian environmental simulator in which a cold, low pressure, almost pure nitrogen environment is maintained. Richard Hanni, 18, showed a furnace he designed for growing a single crystal of aluminum from the molten metal. He hopes to get a crystal with as few flaws as possible in order to get on with the real project, an X-ray study of the structure of the aluminum crystal.

Neil Martin, 17, built not only a flying example of a variable airfoil (one solution to the problem of short take-offs followed by high-speed flight) but also the equipment to develop and test the airfoil. On display were a wind tunnel and a smoke stream device for studying laminar air flow.