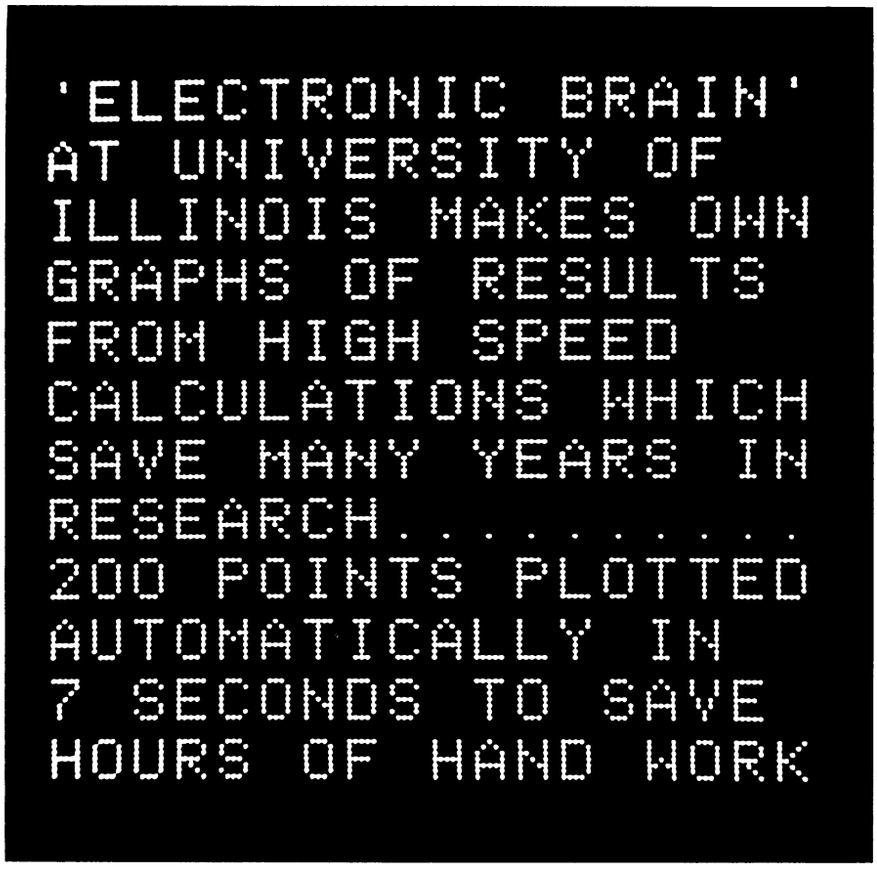

COMPUTER DRAWS PICTURES—A photograph of the cathode ray screen of the Illiac, electronic computer at the University of Illinois, tells in headline form of its newest accomplishment. Results can now either be tapped out by an electric typewriter, flashed on a screen or plotted in a diagram that is then photographed.

PHYSICS

Future World's Poison

➤ ATOMIC POWER threatens to poison the future world with radiation from the waste fission products of uranium. Scientists at the International Congress of Nuclear Engineering at the University of Michigan pondered figures presented by W. A. Roger of Argonne National Laboratory, Chicago.

Assuming atomic power coming into widespread use by the end of the century, there would be three tons of "hot" waste from the many reactors to be disposed of each day.

If the strontium 90 alone produced were diluted with water to a radiation that can be tolerated, it would require about five percent of the entire world ocean volume. Mr. Roger finds that the oceans are not big enough to hold the activity that conceivably may be produced and that this sort of dispersal is not the solution.

Because relatively small amounts of radioactive wastes have been produced so far, disposal has been possible by mixing them with large volumes of water or air, and by burying them as solids or liquids underground or in the depths of the sea. Burial vaults have actually been used in some cases.

Mr. Roger believes that at least during our lifetimes we shall need to isolate and control the radiating wastes in deserts or deep in abandoned mines.

Radiation may have important industrial uses, such as for food preservation, so that cost of handling and storing the waste from atomic power plants may be paid for by use of the radiation. Although this will not solve the menace of radiation or its control over the years, it would provide money to handle the problem.

Radioactivity of the fission products goes on and on, with intensity decreasing by half in varying times, 19.9 years for strontium 90 and 33 years for cesium 137. The radiation hangs around for a long, long time.

Concentrating the wastes and immobilizing them as solids is being worked upon, and Mr. Roger hopes that it may be possible to put the wastes on clay or glass-forming materials and vitrify them so that water cannot leach them out and menace the earth in decades to come.

Although the debris from atomic power plants is very dangerous stuff, the amount is not large compared with the volume that is required to bury our dead. Actually, only a thousandth of the volume occupied by the coffins of the million and a half who die each year would be needed for safe burial of atomic waste.

Pyramids, or radioactive "tombs," of the new atomic age may rise in remote areas to safeguard the world from this new menace.

Science News Letter, July 3, 1954

PUBLIC HEALTH

Rabies Treatment From Serum Now Available

➤ AN ANTI-RABIES serum for humans that should make rabies prevention safer and better is now available to doctors. The new serum, made from blood serum of horses that have been immunized to rabies, will be used with the standard anti-rabies vaccine given to persons who have been bitten by a rabid dog or other animal.

It should be especially helpful in cases of a bite on the head or neck. These bites are particularly dangerous. The new serum may also make it possible to give fewer shots of anti-rabies vaccine. This would both shorten the now long course of treatment and lessen the danger of encephalitis from the vaccine.

Anti-rabies vaccine, or Pasteur treatment as it is commonly called, must be given in any case to protect against the disease, which otherwise is always fatal.

The new anti-rabies serum was developed by Dr. Hilary Koprowski and associates at Lederle Laboratories, Pearl River, N. Y. It has had extensive trials in animals and humans and will now be available generally, the manufacturers announced in New York.

Science News Letter, July 3, 1954

TECHNOLOGY

Plastics Treated to Discourage Nibbling Rats

See Front Cover

➤ CERTAIN PLASTICS, many manufacturers have found, are treated by rats as though they were the choicest of appetizers.

To discourage such destructive nibbling, investigators at Minneapolis-Honeywell use a group of white rats in testing new types of plastic coverings for wires.

The rodents are alternately under- and overfed while scientists check their likes and dislikes.

On the cover of this week's SCIENCE NEWS LETTER, a long-tailed rat is shown ignoring a cheese appetizer to sniff the plastic warily. If he nibbles, the scientists will promptly "rat" on him and all his brothers by adding a strong repellent to the new coating.

Science News Letter, July 3, 1954