

DNA: upping the risk of research

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DENVER (CPS-CUP) - The Movie *Andromeda Strain* dramatized a situation in which a foreign bacteria strain is discovered and typed by a group of scientists. It turns out that the toxin emitted by the bacteria is very potent; if released to the environment it would quickly reproduce and destroy humanity. It is handled very carefully in what is described as the safest, best protected, well-equipped, ultra-secret research laboratory in the world. And yet, the movie makes clear, this genocidal andromeda bacteria is almost injected into the air waves by the lab's fail-safe system, due to an understandable combination of human error and inappropriate knowledge.

At this time, in nearly 100 university, college, and industrial laboratories across the nation, scientists and researchers less well-equipped than those in the *Andromeda* fiction are conducting experiments which, it is widely agreed, run the risk of science fiction-type screw-ups.

Genetic experimentation, in particular recombinant DNA studies, run the "risk" — of a host of possibilities as yet neither proven nor disproven — of disrupting our natural ecological systems, according to Larry Gordon, a researcher with the People's Business Commission (PBC) which opposes recombinant DNA research.

Recombinant DNA experimentation, which is not technically feasible until 1973, is the controlled combining of DNA or gene chains (the biological blueprint that determines the hereditary characteristics of all living things) from one organism with the DNA of another, dissimilar organism to form foreign genes. Recombination has been done with the DNA of a cancer virus and that of a bacteria, for instance. The created strains of foreign or mutant DNA make bacteria with a variety of new properties — from curing diabetes to causing cancer.

It is the wide variety of mutant possibilities that has upset people and ignited a national controversy questioning the necessity of recombinant DNA research. There is, most observers admit, the potential of an "Andromeda Strain" in DNA research — what differentiates proponents from opponents is the degree of seriousness with which they take the risk potential.

So far there have been no problems with the DNA experiments but opponents, like Gordon, speculate on the potential.

Gordon points to the "shotgun methods"



used in recombinant DNA studies as one place where irreparable mistakes might occur. To create new DNA forms, some scientists blast together various species of bacteria like a shotgun shell fired into a small container. Inadvertently, something very harmful, not unlike the andromeda strain, could be created, Gordon says.

Because of this Dr. Lieve Cavalieri, of the Sloane-Kettering Institute for Cancer Research says, "Only one accident is needed to harm all of society."

But what opponents are more concerned with, Gordon says, is the purposeful injection of these mutant colonies in our environment. There is talk of creating new animals and plants which will circumvent our natural ecological system, he says. Gordon adds that scientists hope to develop a hearty plant which would produce nitrogen — a necessary ingredient which most plants must get from the ground. The mutant plant could be grown in areas where known vegetation could not survive. "But," Gordon warns, "what if the plant had the proliferation characteristics of weeds — it might wipe out other plants, causing ecological disaster to the food chain."

A top official at the National Institute of Health, a government agency which gives out genetic research grants, did not deny the claim that risks are involved but he believes, with proper safeguards, the benefits of recombinant DNA experimentation outweigh the potential problems.

The official, who asked not to be named, explained that there were two main classes of advantages. The most easily taken is the reason which guides much of science: "To find out more about ourselves, DNA research is perhaps the most revealing method we have discovered." There is little doubt on either side of the debate: the closer we get to understanding and being able to manipulate gene chains, the closer we are to understanding life. It is a rich line of inquiry.

Second, there are scientific products, like the nitrogen producing plants. Within DNA recombination lay a limitless potential of biological offspring. For instance, insulin, that magical but scarce component of every diabetic's life, could be created in the laboratory. This is good news for diabetics as well as for pharmaceutical industries, which, according to Gordon, have tried to place patents on the information collected in recombination DNA research.

The PBC, flanked by such groups as the Friends of the Earth and scientists like Nobel laureate Dr. George Wald of Harvard, would like to see a "full-scale moratorium" on recombinant DNA research and experimentation until a national public debate is held to decide, in Gordon's words, "whether we have the right and wisdom to fool with Mother Nature."

Brits poison cells

LONDON (ZNS-CUP) - A British military research laboratory has been openly promoting the sale of infectious biological organisms, causing fears among the scientific community that terrorists could purchase them and use them to contaminate entire cities.

The British defense ministry conceded in mid-February that the organisms began

running in the prominent British scientific magazine *Nature* in December. Researchers in at least nine western European nations are reported to have purchased the bacteria.

The ads offer "bacteria by the kilogram," including three strains of germs which cause severe stomach infections, and one strain of influenza, which can cause pneumonia and other lung infections.

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