MEDICINE

Give Inmates Cancer Cells

See Front Cover

➤ THE THIRD part of a study to discover the effects of live cancer cells injected into healthy human beings has begun at the Ohio State Penitentiary, Columbus, Ohio, the Sloan-Kettering Institute reported in New York.

The human guinea pigs are all prisoners who volunteered for research aimed at finding the relationship between natural defense mechanisms and cancer in man. It is being done by the Sloan-Kettering Institute and the Ohio State University College of Medicine.

On the cover of this week's SCIENCE NEWS LETTER Dr. Chester M. Southam is shown injecting live cancer cells into a prison volunteer.

Of the latest group of 53 volunteers, 11 are volunteers for the third time, 15 for the second time, and 27 for the first time.

The first part of the study, begun in May, 1956, showed that healthy volunteers have some kind of natural immunity to the cancer implants which caused them to be vigorously rejected. But volunteer patients who already had cancer did not have this immunity, and the cancers were able to continue growing.

In the second part of the study, the healthy volunteers were given another inoculation of the same type cancer cells that they had received before. This was to determine if their natural immunity had been increased. The results are being evaluated.

In the present part of the study, the inmate volunteers who participated previously will receive implants of cancer cells of a type different from those they received earlier. This is to determine whether or not these individuals will react differently to another type of cancer cell.

Seven types of human cancer cells have been used. All were removed from cancer patients several years ago and have grown since then in laboratory media.

Principal investigators in the study are Drs. Chester M. Southam and Alice E. Moore of Sloan-Kettering Institute, and Dr. Charles A. Doan of Ohio State University College of Medicine, with the cooperation of the Ohio Division of Correction and Warden Ralph W. Alvis and Dr. Richard H. Brooks of the Ohio Penitentiary.

Science News Letter, February 23, 1957

PHYSICS

Space Travel

➤ SPACE TRAVEL, long considered exclusively the subject of science fiction, is seen a step closer with the Air Force announcement it is investigating ion beams for space ship propulsion. If this method is perfected, it would greatly decrease the time required for travel between planets.

An answer concerning the feasibility of the ion beam method of space propulsion is expected within five years, the Air Force's Office of Scientific Research reported. The "pure research" contracts are for about $200,000.

Einstein's theory of special relativity predicts that a pocket watch carried by a fast-moving space traveler will tick fewer times than a similar clock on earth. The slowdown would also apply to his heartbeat, thus the space ship inhabitant would not age as fast as the stay-at-home.

A controversy concerning whether this would actually happen is being waged by American and British scientists in the staid pages of the British scientific journal, *Nature*. (See SNL, Jan. 19, p. 36.) Most scientists agree the space traveler would return physiologically younger than the non-traveler.

They also agree that it is not possible to travel as fast or faster than the speed of light, 186,000 miles per second. So-called "photon rockets," propelled by beams of light, could theoretically approach this speed.

"It is impossible for any material object to travel with the speed of light," Dr. Peter Bergmann of Syracuse University told SCIENCE SERVICE. Dr. Bergmann is one of the world's top authorities on Einstein's relativity theory.

Any speed short of 186,000 miles per second, he said, is theoretically possible, although there is now no known method to accelerate objects having very much mass to velocities anywhere near that speed.

At 99% of light's speed, Dr. Bergmann calculated that a returning space traveler "would have aged about one-seventh as fast" as an earthbound twin. If the space ship he journeyed in weighed 20 tons, it would weigh 140 tons at 99% of light's speed.

Dr. S. F. Singer, physics professor at the University of Maryland, said that the time a space ship takes to turn around would be a "substantial fraction" of the entire journey.

Science News Letter, February 23, 1957

GENERAL SCIENCE

Honorable Mentions in Search Announced

➤ HONORABLE mentions in the Sixteenth Annual Science Talent Search have been announced by Watson Davis, director of SCIENCE SERVICE. These 260 additional high school students selected for national honors are additional to 40 winners announced previously.

The students given honorable mentions go to school in 177 communities, located in 41 states and the District of Columbia. They were chosen from among 20,145 entrants, 3,122 of whom completed the science aptitude examination, submitted recommendations and scholarship records and wrote reports on their scientific experiments.

Of the 260 outstanding seniors in the list, 55 are girls and 205 are boys, the ratio being determined by the number of girls and boys who completed entries.

All 300 selected for honors will be recommended for scholarship awards by the nation's colleges and universities.

Students in the honorable mentions list rank high in their high school graduating classes: 156 of the boys and 50 of the girls ranked in the top five percent in their high school classes.

Those given honorable mentions without exception participated in extracurricular activities. Science clubs have attracted 213 of these students. Of the honorable mentions, 149 have had experience in local, regional, state or national science fairs.

Fifty-seven of the boys and four of the girls named physics as their first choice for future careers. Engineering is the first choice of 50 boys and one girl. A total of 39 boys and girls want to become chemists. Medicine is the chosen career of 34, including 11 girls. Nine girls prefer to become science or mathematics teachers.

Science News Letter, February 23, 1957