GENERAL SCIENCE

Earmarking the Talented

Dr. Lewis M. Terman, known for his testing and follow-up studies of geniuses, urges an early spotting of exceptionally talented children, followed by speeded-up schooling.

➤ THE EXCEPTIONALLY talented child should be spotted early and allowed to speed through grade school and high school in order to enter college by 16 or 17 at the latest.

Dr. Lewis M. Terman, emeritus professor of psychology, Stanford University, urged such a program when he delivered the Walter VanDyke Bingham memorial lecture at the University of California, Berkeley. Dr. Terman is known for his testing of geniuses among school children, and for follow-up studies to find out how these talented youngsters turned out.

He pointed out that studies of the age at which the best creative work is done have shown that, in nearly all fields of science, the best work is done between the ages of 25 and 35.

"Youth of high achievement potential should be well trained for his life work before too many of his most creative years have been passed," Dr. Terman said. Parents need have no fear that their bright sons and daughters will "burn out" early and become dull adults or "peculiar" people who find it hard to get along with their associates.

Of the gifted group studied by Dr. Terman, 29% graduated from high school before the age of 16 and a half. In follow-up studies, he compared the speeded-up ones with those who were kept back among their less gifted schoolmates.

Health records were equally good, he found. More of those who had been speeded along graduated from college, and, on the average, they received degrees nearly a year and a half earlier. They married nearly a year earlier, had a lower divorce rate and score just a little higher on a test of marital happiness, his study showed.

On the other hand, the exceptionally bright student kept with his age group finds little to challenge his intelligence, and all too often develops habits of laziness that later wreck his college career, Dr. Terman warned.

Tests that permit the identification of gifted children are available in great variety and at nearly all age levels, from the primary grades to graduate school. If the boy or girl who is potentially a great scientist is not identified before he reaches the graduating class in high school, there is a very good chance of his being found there by the Science Talent Search, Dr. Terman said. Since this talent hunt, conducted by SCIENCE SERVICE, was inaugurated in 1942, nearly 4,000 boys and girls have been picked for honors out of many thousands who have competed.

"As our need for more and better scientists is real and urgent," he said, "one can rejoice at what the talent search and the science clubs are accomplishing. One may regret, however, that the spirit of the times is not equally favorable to the discovery and encouragement of potential poets, prose writers, artists, statesmen and social leaders."

Also important in developing creative scientists is the atmosphere in which they pursue their college studies, Dr. Terman explained. A study of 18,000 scientists listed in American Men of Science, who earned their bachelor's degree between 1924 and 1934, showed that it is not the great university but the small liberal arts college that has the best record of turning out scientists.

Reed College in Portland, Ore., topped the list with 132 scientists per thousand graduates. The only technological school in the top 12 was the California Institute of Technology, which was second with an index of 70. Kalamazoo College was third with 66; Earlham, Richmond, Ind., fourth with 57, and Oberlin, Ohio, fifth with 56. Only a half dozen of the great universities were in the top 50.

Science News Letter, April 3, 1954

RADIO

Saturday, April 10, 1954, 3:15-3:30 p.m. EST

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS Station.

Prof. Charles F. Bonilla, professor of chemical engineering, Columbia University, will discuss "Nuclear Engineering."

TECHNOLOGY

Glass Bonded to Plastic, New Bodies for Airplanes

➤ AIRPLANE BODIES, boats and automobiles in the near future may be made of glass and plastic chemically bonded together, experts from the U. S. Naval Ordnance Laboratory, White Oak, Md., predicted at the American Chemical Society meeting in Kansas City, Mo.

Five new bonding compounds, all belonging to the class known as chlorosilanes, have been developed to combine with the different types of plastics. Drs. Porter W. Erickson, H. A. Perry Jr. and Irving Silver reported. Part of each of the new compounds will unite chemically with one of the plastic materials while another part will join the structure of glass.

Chemical bonding joins the plastic and glass more solidly than the usual glues and cements. The bonded materials can be made into laminated panels that hold together through repeated test foldings, showing that the finished material combines plastic's flexibility with the strength of the glass fibers.

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BIOCHEMISTRY

Clue to Radiation Cure

➤ A CURE for atomic radiation sickness is in the works. Whether it will be ready in time to help any future victims of accidental radiation exposure, such as those from the March 1 H-bomb tests, or of intentional military use of nuclear weapons cannot be told at present.

So far, however, scientists have found a way to cure radiation sickness in mice. And they have insight into a fundamental mechanism of body chemistry which must be acted on by medicines designed to save radiation victims.

This much appears from a report by Dr. R. K. Main, chief radiological chemist in the U. S. Naval Radiological Defense Laboratory, San Francisco, to the American Chemical Society meeting in Kansas City, Mo.

The mice were cured of their radiation sickness by a "spleen protective factor" obtained from the spleens of young mice. Discovery of this factor was made at the University of Chicago.

How the spleen factor works, which should help toward making a radiation sickness medical cure, was discovered with the aid of radioactive carbon-14. This was used as a tag for a formate chemical. The tagged formate was injected into the mice which were then exposed to X-rays. These studies showed that the tissues of the irradiated mice could not make purines. Purines are chemicals important for building nucleic acids. These acids, in the nucleus of each cell, are intimately associated with cell division and growth.

When the irradiated mice were injected with spleen protective factor, the carbon-14 studies showed that seven days later the mouse body cells were again able to make purines.

From this lead may come the building of chemicals that can save humans as the material from young mice spleens saves other mice exposed to killing radiations.

Associates of Dr. Main in the study were L. J. Cole and Dr. V. P. Bond.

Science News Letter, April 3, 1954

Farmer *cooperatives* in the United States now have a membership of 7,400,000, an increase of four percent in the last year and a record high.