ANTHROPOLOGY

Iron Curtain Neanderthal

➤ A UNITED STATES anthropologist has just made a trip behind the Iron Curtain to shed new light on a Neanderthal man who lived at least 100,000 years ago.

Dr. T. Dale Stewart of the Smithsonian Institution, Washington, D. C., told SCIENCE SERVICE he studied and took measurements of Neanderthal remains found at Krapina about 35 miles northwest of Zagreb, Yugoslavia.

He found from studying the pelvic bones that this primitive creature was in evolutionary development somewhere between the very primitive, or classical, and a type more like modern man.

The classical type Neanderthal man has a very low brow and practically no chin. His remains have been found in Shanidar Cave in Iraq, and in Tabun Cave, Mt. Carmel, Palestine. A type more like modern man was found in Skhul Cave near the Tabun site. Dr. Stewart said the Krapina Neanderthal falls between the Shanidar-Tabun type and the more modern appearing Skhul man.

Dr. Stewart was particularly interested in studying the pelvic bone of this primitive man as a certain part of it is thinner in Neanderthals than in modern man and has an unusual shape completely different from anything ever found in modern man.

The fossil remains of Krapina man are well cared for at the University of Zagreb where they are kept in glass boxes inside glass cases, Dr. Stewart said. A plaque in the wall of the room memorializes Dr. Karl Gorjanovic, who first described the remains and supervised the collection of them.

Krapina Neanderthal man's remains were found between 1902 and 1905 in a shallow rock shelter where the fossil bones of buffalo, rhinoceros and bear had been found repeatedly since 1895.

The plants found with the bones belonged to a warmer climate than now found in the region. This indicates Krapina man must have lived before the last glacial period which began about 100,000 years ago. About 1,000 stone artifacts of flint and bone were found, most of them waste chips from the making of tools and weapons.

An earlier expert, the late Dr. A. Hrdlicka, physical anthropologist at the Smithsonian from 1912 to 1923, wrote a report on Krapina man giving measurements and photographs of some of the specimens.

However, Dr. Stewart explained, in studying one particular feature of the bone structure, it is very important to have exact description and pictures of all the bones found in order to make conclusions about the type.

Dr. Stewart went behind the Iron Curtain to see the original specimens for himself because some of them have never been completely described.

• Science News Letter, 80:255 October 14, 1961

EDUCATION

Teaching by Computer

➤ STUDENTS registering at the Massachusetts Institute of Technology this fall found a new sign on the bulletin board:

"Tired of human teachers? Think a computer can teach better? Find out for yourself by taking a one-hour experimental course on the IBM 709."

More than could be accommodated signed up, and the big electronic computer gave the course to 20 students. It was a course in miniature geometry, based on two definitions and four axioms, and the machine sped one man through it in 33 minutes but took 78 minutes to make certain that another fellow mastered the subject.

Richard D. Smallwood, a graduate student, programmed the computer to do this as part of his study of the use of computers as aids to education. The great memory and speed of a large computer, he thought, should make it superior to simpler teaching machines.

Each student was seated at a microfilm projector with notepaper and an electric typewriter. The machine gave him instructions and put questions to him on the projector screen, and he answered its questions by punching appropriate keys on the typewriter. A book of instructions was stored in the computer's memory and the machine determined what material should be presented to each student in the light of its previous experience and its appraisal of each individual's needs. The computer proceeded, in other words, as though it were playing a game: it considered the possible alternatives at each stage of the course and chose the one that seemed most advantageous.

Mr. Smallwood was seeking answers to two questions: Would the computer vary its presentation of the material when individuals responded differently to its questions? And could it learn from its experience with different individuals and thus become a better tutor as it gained experience? His experiment with 20 students in the course in miniature geometry indicated that the answer to both questions is: "Yes."

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EDUCATION

Future Students May Get Both Science and Culture

➤ TEACHING machines could give students of the future both a scientific and a cultural education.

Student capacity to learn has already been found to be far greater when using teaching machines than with present methods. They learn more, faster and better with the machines.

A young man or woman in today's or tomorrow's society must become "bilingually" fluent and be able to transmit concepts expressed in mathematical terms as well as thoughts expressed in language.

A person with a cultural, or classical, education has mastered and stored many involved thoughts. He is able to think quickly and make judgments from the experience of others and can bring across his own ideas.

However, the culturally educated will likely be a mathematical illiterate, but by the same token the scientifically educated who can express his ideas in mathematics is often unable to communicate his ideas in the spoken languages.

Two persons educated on the extreme levels of science without cultural studies, and cultural studies without science can be as unable to communicate wtih each other as two men from different planets.

Ivan A. Getting, president of the Aerospace Corporation, Los Angeles, Calif., told the Air Force Association Convention in Philadelphia that a "quantum jump in teaching techniques" is needed.

The basic curriculum should be changed, he declared, and is now being changed in many schools. Science is becoming recognized as an integral part of the so-called classical education and in the science-based education, social studies, history, philosophy and economics are being emphasized. He said the ideal situation would be that each student gets both one discipline in depth and the best of a cultural education. This may be possible by using new teaching tools.

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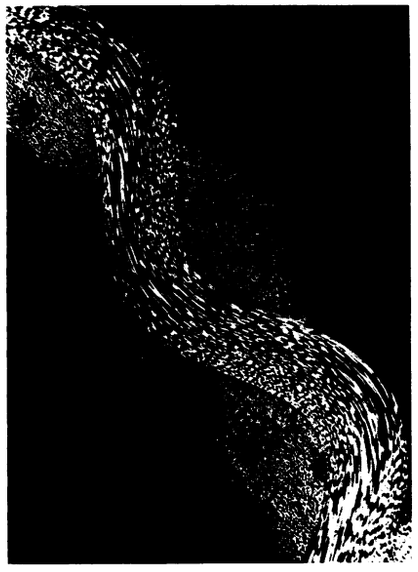

NEW TWIST—Graphite cloth, magnified 150 times, shows more than 1,400 filaments per twist. The fabric, produced by National Carbon Company, a division of Union Carbide Corporation, New York, is being combined with plastic resins in the molding of missile and rocket motor components such as nose cones.