

BIOPHYSICS

Computer Analyzes Men

► **COMPUTER ANALYSIS** of human personality traits may soon help the U.S. Navy select men who can work together effectively in isolated radar stations, jet aircraft or undersea vehicles.

By feeding into a computer meaningful data about such traits as fear, love, anger and frustration, scientists at the National Naval Medical Center, Bethesda, Md., eventually hope to create "mathematical models" of psychologically balanced crews for critical military missions.

The study is called "Project Argus" (Advanced Research on Groups Under Stress). It was described by Dr. William W. Haythorn of the Naval Medical Center's Naval Medical Research Institute, at the opening session of a week-long medical symposium held in Endicott, N. Y., by International Business Machines Corporation. Nearly 100 of the nation's leading biomedical research scientists attended from institutions such as Mayo Clinic and National Institutes of Health.

The Navy, as part of Project Argus, is studying how a group's effectiveness is determined by the particular combinations of individuals it contains, said Dr. Haythorn.

"High speed computers," said Dr. Haythorn, "will eventually enable us to analyze crews with accuracy and efficiency which far outstrips our present ability to observe men. Selecting a three-man crew for a B-47 jet bomber from a group of 30 men, for example, offers a choice of 1,000 possible combinations," Dr. Haythorn said.

The importance of Project Argus was underscored by Rear Adm. Edward C. Kenney, Surgeon General of the Navy, who also spoke.

"With awesome retaliatory power being concentrated in increasingly smaller groups, such as bomber crews, it is imperative that these men function in harmony," Adm. Kenney said.

A major effort to trace the effects of radiation on nearly 1,000 victims of exposure to radioactivity was reported by Dr. Lester A. Barrer, director of research for New Jersey State Department of Health.

The project, said Dr. Barrer, is aimed at providing data to validate established standards of how much radiation human beings can tolerate.

Dr. Barrer began in 1957 with the names of a handful of persons who had been exposed to radioactive materials nearly 40 years ago in a New Jersey radium company. He knew that most of these persons had been employed in the same plant during the years of exposure.

The scientific detective work of Dr. Barrer and his staff has since produced names of nearly 900 persons exposed to radioactivity in the plant and has been able to locate about 600.

Detailed information resulting from painstaking physical examination of many survivors of this experience is filed on thousands of punched cards.

"Since these individuals form the primary

basis for standards in the effects of radiation on man, it is imperative that we maintain permanent records on them," said Dr. Barrer.

A new technique for measuring and evaluating bodily reactions—such as heartbeat, skin temperature and muscle tension—during the study of schizophrenic behavior was described by Dr. Albert F. Ax, director of psychophysiology at the Lafayette Clinic in Detroit.

Transducers attached to the patient's body feed the data into a tape recorder. This information is processed by an electronic computer so that significant responses—rather than large masses of meaningless data—can be analyzed. The computer also correlates different types of responses which otherwise might appear to cancel each other out.

Dr. Ax said the first significant result of the new psychophysiological technique was the determination that there is a difference in certain respiratory and cardiac patterns of schizophrenic and normal individuals.

• Science News Letter, 82:286 November 3, 1962

Dosage Set by Computer

► **TAILOR-MADE** requirements of radiation dosage for human tumors are being computed by an electronic "brain."

A computer is guiding doctors by determining the exact dosage required by each patient undergoing treatment for tumors. Greater efficiency in treatment and avoidance of damage to surrounding tissues are the advantages hailed by Dr. Theodor Sterling, director of the medical computer center of the University of Cincinnati's College of Medicine.

Drs. Sterling and Harold Terry, Cincinnati radiologist, jointly developed the method. It has been successfully used on about 50 patients at Cincinnati General Hospital.

Data about the patient is fed into the



DePaul University

DR. MARY A. McWHINNIE

computer; in three minutes, a "treatment plan" of the patient, for use with cobalt radiation units, is made available.

Previously, each patient had to fit into a radiation "master plan" for each cobalt unit, rather than having a plan tailored to fit the patient.

The Cincinnati method is now standard procedure at Cincinnati General Hospital. Other hospitals throughout the country are now following suit, Dr. Sterling said.

Dr. Sterling presented his findings at an International Business Machines symposium on computers in medicine in Endicott, N. Y.

• Science News Letter, 82:286 November 3, 1962

PSYCHIATRY

Cuban Crisis Creates Fear Among Youth

► **CHILDREN** in school are among those most disturbed by the Cuban crisis, a random survey in the Nation's Capital revealed.

The situation is a major topic of conversation among those even in the lower grades. In some cases, parents at office and home have received anxious telephone calls from their children at school asking information and reassurance.

Behavioral scientists see this anxiety by school-age youngsters as a reflection of their own concern as well as a reflection of the fears and apprehension of the adults.

While some parents react to the situation by attempting to suppress the dangerous possibilities of missile attacks and nuclear war, psychiatrists feel attempts at this kind of isolation of children from the general situation would not be effective.

One psychiatrist felt that parents should be truthful with their children and that parents should try to help them both to face dangers of living and to prepare for them. In terms of how a parent protects the children from knowledge that he can not do much about, there would be as many different opinions from psychiatrists as those queried.

• Science News Letter, 82:286 November 3, 1962

BIOLOGY

Woman Scientist Joins In Antarctic Research

► **A BIOLOGIST** from DePaul University will be the first American woman scientist to participate in the U.S. Antarctic Research Program in the field.

Dr. Mary A. McWhinnie, professor of biology, will sail for Antarctica aboard the research ship *Eltanin* in November.

She and 25 other scientists from a dozen institutions throughout the country will conduct investigations in the south polar region.

Dr. McWhinnie's project, "The Relation of Water Temperature to the Physiology of Molting in Crustaceans," will be supported by a \$15,300 National Science Foundation grant.

The scientists will conduct studies in biology, geology, glaciology, mapping, meteorology, oceanography, seismology and work in upper atmosphere physics.

• Science News Letter, 82:286 November 3, 1962