

Inventory—by far the most widespread of all such tests—moved into personnel offices.

Last year about seven percent of the 750,000 MMPI tests distributed went to industry. A number also went to Government agencies, like the Peace Corps, which use the test to screen employes for sensitive positions. Not surprisingly, psychological testing used this way raised protests over invasion of privacy.

Whether or not the test has been grossly misused and misapplied as its critics claim, it seems likely the MMPI will be swept out of Government in a comprehensive "Bill of Rights" for Federal employes now before a Senate subcommittee. It was introduced by 53 sponsors, and only 51 Senate votes are needed to pass it.

Psychological testing, however, is only one of 14 provisions in the broad-gauged bill designed to protect Government employes from invasions of privacy and unwarranted coercion. The legislation would prohibit the Government from forcing employes to buy Government bonds, attend political functions and disclose personal finances. It would also prevent agencies from asking employes to reveal their race, religion or national origin.

But there is more than meets the eye on this issue of privacy and race.

Theoretically the Government raises grave constitutional questions in asking employes to disclose race or indicate whether they believe in God.

But lately, the racial questionnaire has become a primary means of detecting discrimination. Prohibiting the question, as principal sponsor Senator Sam J. Ervin, Jr. (D-N.C.) does in his "rights" bill, would hamper civil rights efforts to attain equal job opportunities. That charge has, in fact, been leveled against Senator Ervin.

As for asking employes personal questions on sex, religion, and family attitude, agencies hiring people for sensitive jobs are hard put to screen out the deviants without invading their privacy.

Actually, the major professional society in the field, the American Psychological Association, maintains that personality tests have been used with discretion in Government. Popular belief to the contrary, people seeking Government jobs are not normally subjected to these tests, according to reports the Association has received from psychologists in various executive departments.

It has asked the Ervin subcommittee in vain for a case of misuse, says the Association, which believes the uproar over personality testing in Government to be something of a tempest in a teapot, if not an actual red herring.

Apparently, the only agencies to

have used the MMPI as a regular procedure are the State Department, the Central Intelligence Agency and the Peace Corps. The Federal Aviation Agency uses an equally personal test—the Cattell-Eber Personality Factor—for its air control personnel, whose emotional stability is essential.



Sen. Sam Ervin: for restricting tests.

The tests are not appropriate for general personnel use, said Dr. Margaret Ives, chief of psychological services at St. Elizabeths Hospital in Washington, who testified before the Ervin subcommittee holding hearings on the bill. But, said Dr. Ives, for important overseas jobs, "you want to be sure you rule out deviants." The Peace Corps used the MMPI "very successfully," she said.

Mid-Atlantic Fault

A puzzling, 60-mile-wide jog in a line of earthquake locations under the mid-Atlantic Ridge will be one of the first problems probed by America's largest oceanographic research ship on its present globe circling voyage.

The jog is clearly evident when earthquake epicenters are plotted on a map of the ocean, but no paralleling geological feature is known that might account for it.

The Coast and Geodetic Survey's ship Oceanographer will spend about a week criss-crossing a 60-mile square area just southwest of the Azores and directly over the mid-Atlantic Ridge.

With echo sounders, magnetometer and gravity meter it will be probing for any sign of a fracture or fault in the

bottom—the most likely explanation for the seismic observations, according to Dr. Harris B. Stewart Jr., director of the Environmental Science Services Administration's Institute of Oceanography.

Oceanographer left Jacksonville, Fla., on March 31 on an eight-month global voyage that will eventually take it to its permanent base in Seattle, Wash.

Along the way, it will make a number of stops that will do as much to further international relations in science as for science itself. Perhaps the two most important stops will be in Monaco on April 30 and Odessa, on the Soviet Union's Black Sea coast, on May 11.

Monaco is the home of the Oceanographic Museum of Monaco which is headed by oceanographic pioneer Jacques Cousteau. Oceanographer will tie up in Monaco during the conference there of the International Hydrographic Bureau.

Among other scientific programs scheduled for the voyage are heat flow measurements in the Andaman Sea off Burma and an investigation of the possibility that the world's oceans provide a vast sink where dust and debris from the continents settle out of the atmosphere.

The probe of the mid-Atlantic Ridge will be aided by use of a seismic reflection profiler—a sort of high-power sonar rig—and by the precise navigation made possible by the Navy's navigation satellites.

The SRP records sound reflections from the rocks underlying ocean sediments as well as from the sediments themselves.

With its help, scientists from Columbia University's Lamont Geophysical Observatory and from ESSA hope to locate the fault they believe may be associated with the jog in seismic data.

Study of the earthquake line and its peculiarities under the mid-Atlantic is directly related to the theory that the Americas and Europe and Africa were once one huge continent and have slowly drifted apart.

According to the theory, the drifting is still going on as molten material deep in the earth wells up in the mid-Atlantic and spreads out toward the continents, pushing them apart.

Cancer Cells Starved In Enzyme Treatment

What appears to be a basic approach to the killing of cancer cells without harming normal ones is being tried cautiously with humans after 14 years of study.

The enzyme L-asparaginase (SN:

2/19/66) is the subject of research under grants from the National Cancer Institute, Bethesda, Md., to eight different groups, and several independent institutions also are studying it.

This is the way it has worked in animals, including dogs. Some tumors in leukemia and lymph glands require an amino acid called L-asparagine for their growth. They cannot produce it but obtain it from the body fluids of normal cells. When the enzyme L-asparaginase is injected, the amino acid is eliminated from the body fluids and the cancer cells die.

The pressing question, scientists are reasoning, is whether lymphomas or any other tumors of man are susceptible to L-asparaginase.

Dr. Lloyd J. Old and his colleagues at Sloan-Kettering Institute for Cancer Research in New York have devised tests to find out exactly which individual tumors need the amino acid so they will know what patients could be helped by the treatment. They have treated three patients so far but it is too soon to make a report on the results. Their work with dogs, however, is extremely encouraging.

There has been one report of successful treatment of a nine-year-old boy with advanced leukemia in Dallas, Texas, at the J. K. and Susie Wadley Research Institute. But many longer remissions have been reported from other drugs.

With other treatment up to three and a half years' remission of leukemia was possible in one case, and two years' remission is now fairly common.

What is important with L-asparaginase is that it is the first example of cancer therapy based on a "distinct aberration of certain malignant cells," says Dr. Old.

Although the enzyme is scarce and expensive at present, it is being made from bacteria for experimental use, and within a year or so it is expected that scientists will find out whether it is a real advance in the attack on human cancer.

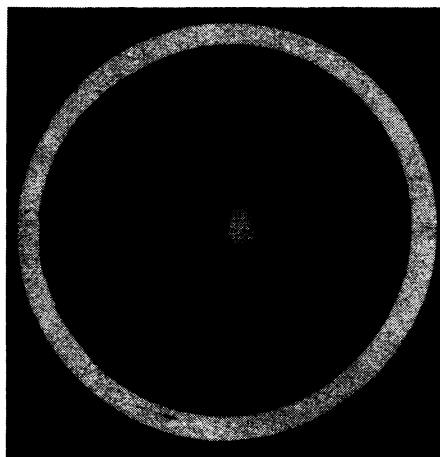
"Even if it is not," says THE LANCET of London, "these findings add new impetus to the search for biochemical peculiarities of malignant cells that may serve as leads to specific treatment."

Moon Sampler

Six United States spacecraft have profitably flown around, crashed into, or landed on the moon; now one is about to "handle" the lunar rock and dust, chewing a hole in the lunar surface to discover whether the moon 18 inches down is the same stuff as the moon's face.

The soft-landing Surveyor 3, sched-

uled to leave earth April 17 and to reach the moon three days later, is assigned this task. Nestled low on its side is a two-inch wide scoop mounted on an extendable arm with a reach of 64 inches. Scientists at the University of California's Jet Propulsion Laboratory will try, while watching progress through a television camera on the spacecraft, to guide the digger through a series of



NASA

Glint and shadow of first Surveyor.

maneuvers, including scraping holes, lifting out samples and dropping the samples to see if they shatter.

The scoop weighs slightly less than six pounds on earth; it will weigh about a pound on the moon. The scientists may try using the scoop as a hammer, dropping it on rocks to learn their breaking strength.

A similar device will be part of Surveyor 4. The final three flights in the seven-mission series are to carry robot chemical laboratories to analyze lunar material and radio the results to earth. One likely experiment will bombard samples with alpha particles and evaluate the emissions given off in response.

Originally there were to have been 10 Surveyor flights, but the National Aeronautics and Space Administration knocked three off after the successes of Rangers 7, 8 and 9; Lunar Orbiters 1 and 2; and Surveyor 1.

Surveyor 3 is being aimed at about the same latitude as Surveyor 1 (glimpsed by Orbiter 3 in the photograph above), just a few degrees below the moon's equator, and about 20 degrees or 375 miles farther east, but still in the Sea of Storms. Early manned landings will be restricted to a belt extending about five degrees north and south of the equator and 45 degrees east and west longitude, but NASA says that the final Surveyor shots may be allowed outside that region to do some general exploring if the early ones prove very successful.

LSD for Sociopaths

After several years of controversy, reports that LSD helps cure alcoholics are beginning to achieve consistency. Two studies last week reported almost identical results. And the results were promising.

One came from the Veterans Administration hospital in Lexington, Ky. There, Drs. Murray F. Ables and Erling W. Eng treated 122 alcoholics with a single LSD session, plus before-and-after group therapy. A year later, the patients had fewer arrests, fewer cases of delirium tremens, more days of abstinence and gainful employment.

At Maryland's Spring Grove Hospital, another LSD study with 144 alcoholics reported similar success. Strangely enough, both studies reported 67 percent of the patients had improved.

But a third, smaller and somewhat tighter research effort at the Psychopathic Hospital, Iowa City, suggests alcoholism may be only one of several conduct disorders that are susceptible to LSD therapy. It also indicates that the dramatic results of LSD tend to wear off after six months.

The Iowa patients were an unusual group. Ten of a total of 20 had been referred to the hospital by the courts for such things as homosexuality, exhibitionism, drug abuse, alcoholism and even embezzlement.

LSD was primarily effective with those patients classified as having a pathological personality, according to Dr. Charles Shagass of the Temple University Medical School in Philadelphia, who with Drs. Robert M. Bittle and Delmer C. Eggert, conducted the study.

Pathological meant, among other things, impulsive behavior, destructiveness, sexual perversion, repeated arrests, poor marital and work histories, drug abuse and lack of guilt feelings. Seven of nine such patients responded strongly to LSD, even to the extent of character reformation. In fact, lack of guilt feelings and a poor marriage were most indicative of the patient who profited from LSD.

On the other hand, only one of eleven neurotic or depressed patients reacted with meaningful insights.

It appears, says Dr. Shagass, that LSD is useful therapy for patients with specific behavior problems. His observations appear to bear out European studies.

"It follows that problems such as homosexuality, or consuming too much alcohol would be more amenable to change than a problem which involves multiple activities and which can be described only in a general way"—the neuroses like depression, anxiety and passive resentment.