

studies—it suggests a possible way to achieve contraception without jamming all of the natural activities of the reproductive system.

Control of FSH and LH releasing factors could have double applications in family planning, according to Dr. Gordon W. Duncan of the Metabolic Diseases Research Division of the Upjohn Company, Kalamazoo, Mich.; it may offer a means of selectively inducing ovulation, “perhaps at will.” This could be used to help barren women conceive as well as to help fertile women avoid conception.

In another area of contraceptive research, a contraceptive that is administered to the man but acts in the woman is being used as a tool to study reproductive events, Dr. Duncan reported. Studies carried out by Dr. R. J. Ericsson of Upjohn recently demonstrated that certain natural or synthetic estrogens can be given to a man without impairing his fertilizing ability, and can prevent conception by interfering with reproductive events in the woman. The estrogens are carried by the semen to the uterus where they appear to alter the rate of ova transport through the Fallopian tubes.

Such a contraceptive can be given only for a short time without actually affecting the development of sperm in the male testes and, therefore, is not being considered for actual clinical use at any time, Dr. Duncan explains.

Studies Dr. Ericsson is making of capacitation—the capacity of sperm to penetrate and fertilize an egg—however, may lead to a new contraceptive applicable for human use. Sperm cells are not able to fertilize an egg as soon as they enter a woman’s body. They must reside in the warm estrogenic environment of the female for four to six hours before they develop the capacity to penetrate the ovum. Although it is too soon to say when or how, Dr. Duncan believes it is possible to think of developing a drug that could be given to a woman to somehow alter the estrogenic environment in which sperm cells finally develop their potency. If this could be done, contraception would be achieved at a local level and would not necessarily significantly affect the total physiological processes of either the man or the woman.

IUD Report in May

Contraception by the double coil, hailed a few months ago as one of the most promising new intra-uterine devices, has not lived up to its promise.

Studies of 732 women during the last four months show preliminary evidence that the double coil is no more effective than any other IUD and is

the second most likely to be expelled from the uterus.

The double coil, known as the Saf-T-Coil, was either expelled or removed from 90 of the 732 women; two accidental pregnancies occurred among the rest.

Dr. Christopher Tietze of the Population Council, whose work was reported in Atlanta (see p. 349), found in comparative studies of six types of IUD’s that the large bow is least likely to be expelled.

A comprehensive study of IUD similar to the recent report on “the pill” is being prepared for the Food and Drug Administration and may become available sometime in May.

Thousand-Inch ‘Scope For Infrared Scan

A beginning is now being made on a new way of studying planetary atmospheres in the infrared spectrum. Knowledge of what chemicals are found in what amounts in the atmospheres surrounding planets, especially the two closest to earth, is necessary for designing instrument packages to explore their surfaces.

The largest telescope used so far for infrared studies of Mars and Venus is the 200-inch Hale instrument atop Mt. Palomar, although it was designed for optical astronomy.

Now a proposal is being made to build a 1,000-inch telescope specifically to exploit the new technique in scanning the infrared region of the spectrum.

Three scientists writing in the April *SCIENCE JOURNAL* urge international funding for the instrument. But the idea is so new that neither the National Science Foundation nor the National Aeronautics and Space Administration—source of any U.S. contribution—has yet heard anything about the proposal.

Scientific support for such a giant instrument has already come from scientists who have worked with the three in developing the new technique for infrared astronomy, known as multiplex interferometric Fourier spectroscopy, or MIFS.

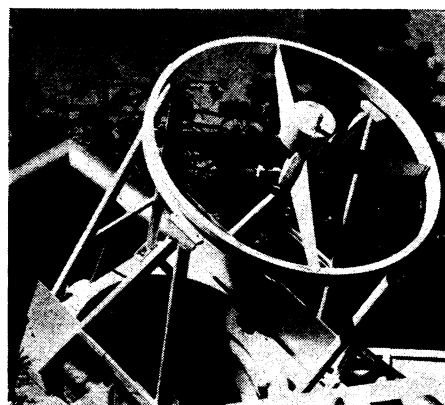
Linking an MIFS system with a 1,000- telescope would be a “very good bargain,” especially if built and operated internationally, the three scientists contend. The telescope would cost an estimated \$15 million, which is about the same cost as soft-landing an instrument package on Mars.

A launched instrument package, however, would be a “once-and-for-all experiment,” out of the researcher’s hands from the moment of launch. Actually, control over the design of experiments

carried on the planetary probe would be minimal for at least two years before launch.

A 1,000-inch ground-based instrument, on the other hand, could provide “a whole gamut of investigations” concerning planetary atmospheres, Drs. Peter Fellgett, Pierre Connes and James Ring Stress. The three scientists are from, respectively, the University of Reading in England; France’s National Center for Scientific Research, and England’s University of Hull.

The reason the 1,000-inch would be



University of Arizona

Possible unit of 1,000-inch ‘scope.

such a bargain is that its components would not have to be as precisely aligned as the 200-inch. The new instrument would be constructed specifically for infrared observations, which have a much longer wavelength than visible light. This allows building the telescope with considerably less precision than would be required for visible wavelengths.

The three scientists propose building the telescope in increments of 120-inch instruments. They could thus be made on an assembly line basis, with the added advantage that the first 120-inch device could be put into operation while the next was being completed.

Even that would be half again as large an instrument as the 80-inch, the largest normally used for MIFS studies of planetary atmospheres.

Testing Issue: A Straw Man

Not so many years ago, personnel directors discovered something called the personality inventory—a paper and pencil test that by probing personal attitudes, sexual and religious feelings, and family relationships reveals the mark of an abnormal personality.

Though the test was originally designed for medical use, Government and industry quickly saw its utility and the Minnesota Multiphasic Personality

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.

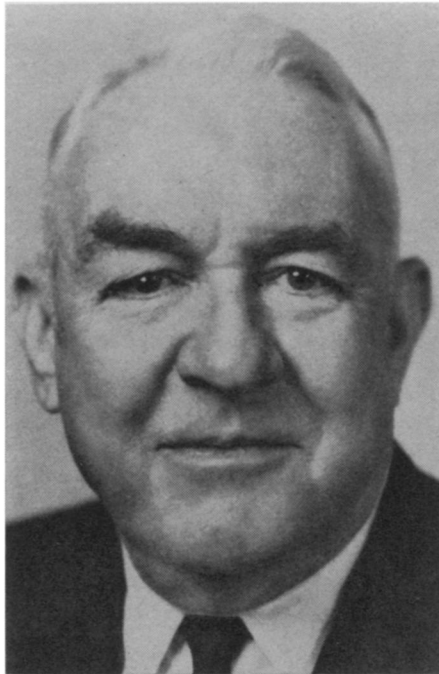
As for asking employes personal questions on sex, religion, and family attitude, agencies hiring people for sensitive jobs are hard put to screen out the deviants without invading their privacy.

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: