

that the UFO's will reappear when it does. At NICAP Nixon says UFO reports usually run in five-year cycles and 1972 should be the start of another cycle.

Dr. Donald I. Warren of the School of Social Work at the University of Michigan in Ann Arbor has another behavior theory on UFO's. In his view UFO's provide a form of escape. "One expression of this escape," he says, "is the possibility of other lives, other planets, other beings like or unlike oneself." UFO's "present the opportunity to escape the system without threatening one's gains in the immediate social environment." Dr. Warren, however, based his conclusions on a person's dissatisfaction with his socioeconomic status. A well-educated person earning a relatively small salary might not be content in his situation and would therefore, suggests Dr. Warren, be a likely person to attach importance to himself

by believing in and sighting flying saucers.

This theory may have some credibility, but an article by Dr. Warren in SCIENCE last November advancing these views received a critical response from scientists. The controversy, brought on by a lack of adequate psychological and behavioral information on the subject, points out, as does Dr. Warren, "that this phenomenon has been inadequately studied by the behavioral sciences."

In an attempt to coordinate existing information, NICAP has instituted Project ACCESS (Automated Clearinghouse for Collection and Exchange of Sighting Statistics). All available sighting data (people, places, times, etc.) will be stored in a computer and made available to interested parties. If, these inputs are scientific and objective, as NICAP's Nixon insists they will be, Project ACCESS will be a useful tool for behavioral scientists. □

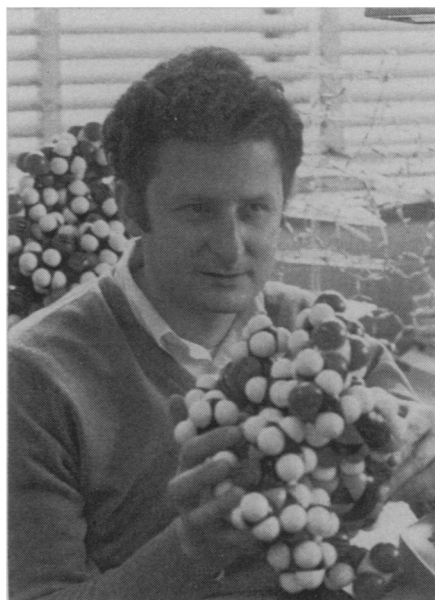
DRUG ACTION ON DNA

Now visible, in 3-D

For some years scientists have zeroed in on drug action at the most intricate cellular level. Although they understand the molecular basis of action for several drugs, it is only now that the three-dimensional structure of a drug has been correlated with its biological action.

Dr. Henry M. Sobell of the University of Rochester reported last week that by using the technique of X-ray crystallography, he has pinpointed exactly how the antibiotic actinomycin D interacts with DNA. In fact, since the Crick-Watson model for DNA was proposed 18 years ago, this is the first time scientists know visually how anything sticks to DNA.

Dr. Sobell, a physician-turned-crystallographer, says he crystallized actinomycin with deoxyguanosine, one of the four bases of DNA. The three-dimensional structure of the complex immediately suggested how actinomycin binds to DNA. Dr. Sobell believes that the flat portion of the drug molecule fits in between the nucleotide base sequence, GpC, while the protein subunits of the antibiotic make a hydrogen bond with guanine residues on either strand of DNA. Actinomycin has two-fold symmetry relating to the protein subunits. This enables the drug to bind to a base sequence in DNA with two-fold symmetry. This pattern of recognition was first conceived several years ago by Dr. Jacques Monod, who shared the 1965 Nobel Prize with Drs. Francois Jacob and Andre Lwoff for their work in biological regulation. Dr. Sobell's report of the first visual sighting of the drug-gene contact was made in San Francisco at the 62nd annual meeting



Univ. of Rochester

Sobell and drug-DNA molecule model.

of the American Society of Biological Chemists.

The medical implications of Dr. Sobell's work may be far-reaching. Actinomycin's repressor-action on DNA, as revealed in the crystal model, might explain why actinomycin works as an antitumor drug. However, the drug is too toxic for lavish clinical control of tumors, precisely because of its stringent action at the molecular level. But now that scientists understand how actinomycin binds to DNA, Dr. Sobell believes they can probably synthesize new antibiotics or drugs that would act on tumor cells or viruses, but not on cells, in the rest of the body. □

SCIENCE NEWSBRIEFS

Nuclear power safety

The Atomic Energy Commission last week announced new, stricter criteria for nuclear power plant safety. Prime emphasis in the new standards is the need for back-up systems in case cooling water systems for reactors fail. Such an accident could conceivably result in overheating of reactor cores, melting of shielding and release of radioactivity. Most affected by the new criteria are five plants licensed before 1968. They will have to install the back-up systems within three years. □

California's AEC ties

The huge University of California system has been heavily involved in defense and weapons research since World War II. Partly in response to student-faculty criticisms (SN: 1/16/71, p. 50) the UC regents last week recommended changes in the contractual arrangement between UC and the Atomic Energy Commission under which the Lawrence Radiation Laboratory is operated. The laboratory consists of two units, the non-secret facility on the hill behind the Berkeley campus and the more closely guarded facility at Livermore. Under the recommendations, the administrative ties between the two units would be severed. And the director of the Berkeley laboratory would report directly to the president of the university rather than, as now, to the chancellor of UC at Berkeley. □

Doctorate oversupply

A new National Science Foundation study on the supply of and demand for doctoral scientists, projected to 1980, indicates an even greater imbalance of supply over demand than in a study done two years ago. Over-all projections show a supply of about 325,000 doctoral scientists in 1980—against an expected demand for about 285,000. The greatest imbalance is in engineering, with a projected 40 percent oversupply. Next greatest is in social sciences, with a 20 percent oversupply. The life sciences situation is somewhat better, with a 9 percent oversupply predicted. Mathematics will see an oversupply of around 10 percent. Only in the physical sciences will supply and demand be essentially in balance. □

Oldest mummy

Possibly the oldest (5,000 years) intact mummy ever found has been unearthed in a tomb in Sakkara, 15 miles southeast of Cairo. The ancient court musician Nofre died in the sixth year of the reign of King Nie Ossen-Ra. The discovery was called historically and scientifically more important than the findings of the Tutankhamen tomb in 1922. □