ARCHAEOLOGY

Experts Eager to Keep Dead Egyptian's Feet Dry

THE TWO ASWAN DAMS, long a political issue, are now a major archaeological one.

Water backing up behind the dams, which are being built with money from the USSR, will ruin two ancient treasures by September, 1963, experts predict.

So UNESCO experts propose to save one wonder, the great temple of Rameses II, by building another dam out from the west bank of the Nile. The other archaeological area, the island of Philae, will be protected by still another dam, if funds are available.

UNESCO has launched an international campaign for the needed funds.

The Nubian valley where the Aswan dam is located is only a desert, but it contains some of the grandest monumental and architectural efforts of ancient Egypt.

Rameses II was a fanatic temple builder and one of the great pharaohs of the New Kingdom in the 13th century B.C. He had a huge temple hewn out of the mountainside at Abu Simbel to glorify his name for all time.

On the island of Philae the strange cult of Isis, goddess of fertility, once flourished. The big temple still shows much of its original grandeur and beauty. To save this area, an artificial lake can be created by building another dam with its ends resting on neighboring islands and on the bank of the Nile.

Plans have been made to remove other temples and monuments that will be flooded by the rise of the Nile.

UNESCO's appeal asks governments, public and private institutions, and all interested persons for help to the United Arab Republic and the Sudan in this enormous archaeological rescue mission. In return for salvage action, at least half the treasures removed by excavations carried out in the threatened area has been offered to the participants.

Science News Letter, March 5, 1960

ARCHAEOLOGY

U. S. Expedition to Probe Herod's Sunken Harbor

KING HEROD'S sunken harbor and the ancient sea routes used by King Solomon will be explored this year.

A marine archaeological expedition will probe the coastal waters of Israel this spring and summer to attempt recovery of old objects from the sea bottom. It is hoped that such objects may shed new light on the early history of sea routes used by the Phoenicians, King Solomon, Roman and Greek galleys and, in more recent times, the ships of the Crusaders.

A main point of exploration will be the sunken harbor of Caesarea, in early Christian times the leading city of Palestine and the favorite of King Herod the Great, from which St. Paul sailed on his journey to Rome.

In preparation for nearly three years, the expedition will be sponsored jointly by the American-Israel Society in Washington, D. C., and Princeton Theological Seminary, Princeton, N. J. Its leader will be Edwin A. Link, an inventor and explorer.

Mr. Link will use his newly constructed, especially equipped vessel Sea Diver in the undertaking. It is 91 feet long, diesel powered, and will set out on the 6,000-mile crossing from Miami to Israel early in April.

The venture is claimed to be the first in which a vessel especially built from the keel up for underwater exploration will have undertaken a search for objects of antiquity.

The American-Israel Society was founded in 1954 as a non-political, educational organization dedicated to advancement of understanding between the United States and Israel by exchange of cultural information. It is composed of persons of all faiths.

The Princeton Theological Seminary is a Presbyterian institution and one of the oldest centers of religious instruction in the United States.

Science News Letter, March 5, 1960

PHYSIOLOGY

Electromagnetism May Be Used for Brain Studies

ELECTROMAGNETISM may be used to stimulate the conscious human brain, produce mental, emotional and hormonal responses, and to stimulate nerves, muscles and other irritable tissues.

This possibility is suggested in recent experiments by Dr. Alexander Kolin and Dr. Norman Q. Brill, assisted by Paul Broberg, of the University of California Medical School at Los Angeles.

Such a technique might be a valuable tool in exploration of the central nervous system, they said.

The UCLA research team has been able to stimulate frog nerves and excised frog muscles by placing them in an alternating magnetic field. The muscles contracted just as if they were connected to stimulating electrodes. The effect was due to eddy currents induced in conductive tissues and their surroundings, Dr. Kolin said.

The investigators were also able to induce visual and other sensory effects in human subjects by electromagnetic fields adjacent to the skull.

Locating brain areas which control different types of behavior has been largely accomplished by applying electrodes to various brain areas and stimulating them, Dr. Kolin points out.

Such a technique is obviously limited in humans, being practical only when the skull is opened for surgery and the patient is under influence of drugs.

The use of electromagnetically-induced eddy currents to stimulate or inhibit limited brain areas, if practical, could be done without surgery in a conscious subject, the investigators pointed out.

Such a technique would greatly facilitate exploration of how the brain controls human behavior.

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IN SCIEN

METEOROLOGY

Los Angeles Has Two Sea Breezes

FLORIDA has a sea breeze, but Los Angeles has two, a scientist has found from a detailed examination of the daily variation of the Santa Monica winds.

Prof. James Edinger of the University of California at Los Angeles said one of the two sea breezes comes from the west-southwest, below the much-publicized temperature inversion, and the other above from the south. His report was made at the American Geophysical Union meeting at the University of Southern California in Los Angeles, Calif.

Prof. Edinger suggested that the direction of the upper flow is due to the east-west orientation of the San Gabriel Mountains, which rise above the inversion and there play the role of a coastline heated by the sun. (A sea breeze along a coastline normally occurs as cool sea air moves onshore when the land becomes sufficiently heated by the sun during a summer day.)

His analysis was confirmed by a mathematical study of the problem by Dr. S. K. Kao, also of UCLA, who found that the temperature inversion acts as a boundary separating the two circulations.

Science News Letter, March 5, 1960

NAVIGATION

Turn Signals Tested For Warning Ships

THE MILITARY Sea Transportation Service is experimenting with turn signals for ships. They are being tried on the Golden Eagle, a ship operating from Norfolk, Va., to Bremerhaven, Germany.

Conventional whistle signals are often drowned out by engine noise and other ship sounds, and bridge watches have come to rely on the visual signal of steam from the whistle as a precautionary measure.

The arrow signals may provide a reliable supplement to the sound. When another ship is attracted by the whistle, it can double-check on the signal by noting which direction the arrows are pointing.

The Golden Eagle's arrows are attached horizontally across the railing on the forward side of the flying bridge, where they are visible to ships forward of the Eagle. The arrows are pointed at both ends, with the appropriate point designed to light and indicate the ship's movements to port or starboard.

Capt. A. Vreugdenhil of Holland invented the signals, which were first installed on the Dutch cross-channel ship Batavier V.

Visible for two to three miles in normal conditions, the arrows are composed of 28 100-watt bulbs enclosed in amber globes.

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CE FIELDS

PSYCHIATRY

Mental Care Improves But Still Inadequate

STATE- AND county-operated mental hospitals, which care for 85% of the nation's mental patients, offered better care in 1958 than they did in previous years despite a slight budget cut.

These hospitals spent nearly a dollar a day more on each patient in 1958 than in 1957.

The number of physicians in these institutions also increased, but the total number in 1958 was still only 57% of the number needed. Staff employees rose from 27 per 100 patients in 1956 to 31 per 100 patients in 1958.

Lawrence J. Linck, executive vice president of the National Association for Mental Health in New York, reported that the Association's findings are good but warned against too much optimism. Mr. Linck said there is still only about one doctor where two are needed, and that almost half of the patients are not even getting minimum psychiatric care. He stated further that the $4.06 now being spent daily on each patient is only a little more than a third of what the Veterans Administration mental hospitals spend, and one-seventh of what is spent in general hospitals.

The average state government spends a little over three percent of its total budget on maintenance of mental hospitals. State and local governments, considered together, spend less than two percent, and this has to stretch to cover 650,000 mental patients in all states, the Association's report showed.

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PUBLIC SAFETY

Drivers "Tense Up" On Unpredictable Road

DRIVERS tend to "tense up" on roads that keep them guessing as to what the next hazard will be.

This could be a busy artery through a city at rush hour, or an area along a wide highway congested with shopping center traffic.

Tests were run on ten drivers who were "wired" for measuring galvanic skin reflex associated with tenseness. Results showed tension in drivers mounts as hazards become more difficult to predict, and as traffic complexity increases.

Richard M. Michaels of the U. S. Bureau of Public Roads told the Highway Research Board meeting in Washington, D. C., that the tests were conducted during five time periods, including peak and off-peak traffic hours, and at night. The tests were conducted on two urban streets.

During the tests, "traffic events" requiring action occurred at the rate of one every 21 to 35 seconds. The movement of other vehicles accounted for 60% of these "events."

Robert V. Rainey, John C. Conger and Charles R. Walsmith of the University of Colorado School of Medicine reported "significant differences" were found between high school sophomores electing to take driver education courses and those who did not study driving.

The 15½-year-old boys who elected to take driver education courses tended to be less active, more deliberate and restrained, and less prone to rapid and hurried action. They appeared less concerned with dominating others and with being conspicuous. They were more likely to be "serious and subdued." Socially, these boys also tended to be more shy and less spontaneous in social gatherings.

The researchers pointed out that driver education classes thus appeared to be composed of "a selected group" and this must be taken into consideration when weighing the merits of high school driver courses in teaching safety.

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MEDICINE

TB Vaccine Stimulates Mouse Tumor Recovery

THE VACCINE that has stimulated resistance against tuberculosis appears to be doing the same job with implanted tumors in laboratory mice.

This is one of the scientific advances appearing in the two-year report of the Sloan-Kettering Institute for Cancer Research, New York. The report was made public by Dr. Warren Weaver, chairman of the board of trustees, and Frank A. Howard, president.

Scientists at the Institute have found that the body's natural defenses can be stimulated to recover 100% from one form of cancer, sarcoma 180, in laboratory mice. The most effective agent for this stimulation has been BCG, bacillus calmette guerin, which has been commonly used to stimulate resistance in children exposed to tuberculosis.

Studies of animals with spontaneous rather than implanted cancers are now in progress to discover whether or not these, too, have the profound effect on the defense system and if stimulation of the defenses can slow or stop their growth.

Another advance marking two years of scientific progress at the Institute involves a study of possible hazards from X-ray procedures. It was found that a one-degree misalignment of a conventional X-ray cone during chest X-ray can increase threefold the dose to the ovaries. Furthermore, failure to adjust the machine to a short man can increase the dosage to the scrotum by 60.

The report opened with a memorial statement honoring the late Dr. C. P. Rhoads, director of the Institute since its founding in 1945. He died on Aug. 13, 1959.

Science News Letter, March 5, 1960

GENERAL SCIENCE

New Chemistry Course Presentation Described

SEVERAL ATTEMPTS are at present being made to improve the presentation and content of scientific courses both in the high school and university. Many of these new courses are being sponsored by the National Science Foundation.

The new introductory course in high school chemistry prepared by the Chemical Bonds Approach Committee is perhaps one of the most important innovations in the teaching of chemistry in many years. The C.B.A.C. course is, as its name implies, based upon the observation that it is the chemical bond that distinguishes chemistry from related fields. The course, complete with laboratory manuals for both students and teacher, is already completed in draft form, and is at present on trial at nine high schools in different parts of the U.S.

The most complete description of the C.B.A.C. course to date is presented in this month's (February) edition of Chemistry. Included are three lengthy extracts from the yet unpublished trial edition of the text in which the various bond types are discussed in detail with the aid of many diagrams and plates. Effectively, this article is a valuable chemistry lesson in itself.

Copies of the February issue of CHEMISTRY may be obtained from SCIENCE SERVICE, 1719 N St., N.W., Washington 6, D. C., at 50¢ a copy, or 35¢ a copy for orders of ten or more copies. This important issue is being offered as a bonus to those sending a year's subscription to CHEMISTRY, at $4.00 (eight issues, September through April).

Science News Letter, March 5, 1960

PSYCHOLOGY

Mental Attitude Affects Tendency to Overeat

EMOTIONAL depression disturbs the normal balance of sugar metabolism in the body, and this, in turn, caused some obese women to overeat.

The overeating is not caused by an increase in hunger drive, but by a failure of the brain's signal mechanism to indicate when hunger had been satisfied, Dr. Albert Stunkard, professor of psychiatry at the University of Pennsylvania, reports. The upset in sugar metabolism seemed to interfere with proper stimulation of the brain's mechanism for indicating hunger satisfaction.

Research by the investigators indicates that mental attitudes and reactions play an important role in accelerating or retarding a person's inclination to become excessively overweight.

Assisting Dr. Stunkard are Drs. Anna Marie Chirico and Myer Mendelson, and Charles R. Koch and Mrs. Barbara Martin. The team received a $140,000 grant from the National Institute of Mental Health, Bethesda, Md.

Science News Letter, March 5, 1960