

TECHNOLOGY

Nuclear Reactor to Aid Economical Electricity

A GAS COOLED nuclear reactor now being built is expected to leapfrog some drawbacks of existing atom plants and land close to the electric utility industry's goal of generating economical power with atomic energy.

The High Temperature Gas-Cooled Reactor (HTGR) on the Susquehanna River in southeastern Pennsylvania is to be completed in 1963. Its development and operation are expected to show short-cuts to competitive electricity production using atomic fuels.

Dr. Peter Fortescue and Corwin L. Rickard of General Dynamics Corporation's General Atomic Division in San Diego, Calif., told an American Nuclear Society symposium in Philadelphia, Pa., that high performance is expected from this prototype plant because it is technically simple and compact.

Its hot core will heat the helium gas coolant to 1,380 degrees Fahrenheit, enabling steam to be generated at 1,000 degrees and pressures of 140 pounds per square inch or higher. These steam conditions approach those now used by modern, efficient turbine-driven generators.

The 40,000-kilowatt prototype is being built for 53 private utilities in 31 states and the District of Columbia. It will have a high degree of inherent safety.

This prototype itself is not expected to produce a kilowatt-hour for seven mills, but rather to show the way to short-cuts that will lead to economical, 300,000-kilowatt nuclear power plants.

Participating in the symposium were nuclear experts from England, Australia and Russia, as well as from U. S. industry and Government.

Science News Letter, February 20, 1960

MEDICINE

Study Links Asian Flu, Abnormal Births

THE BELIEF that infection from Asian flu during pregnancy can cause abnormal births has been supported by the research of a British doctor.

A study was made in Northamptonshire of 43 pregnant women who had Asian influenza during their pregnancy. The illness was severe enough to cause 38 of them to be bedridden. They were in bed an average of five days, Dr. M. J. Pleydell, formerly Deputy County Medical Officer of Health, Northamptonshire, reports in the British Medical Journal, Jan. 30, 1960.

The illness afflicting these women consisted of headache, fever, pain in the limbs, depression and "typical influenza" symptoms, patients' records revealed. The British researcher cautioned that no attempt was made to identify the organism responsible for the illnesses.

The mothers did, however, suffer from a fever-causing disease with signs and symp-

toms similar to influenza between Sept. 1, 1957, and Dec. 31, 1957, when Asian flu had reached epidemic proportions in England.

The babies of these mothers were compared with the babies of 1,040 pregnant "control" mothers also selected during the flu epidemic.

Histories of the 43 showed that: Of 12 mothers who had Asian flu during the first three months of their pregnancy, one gave birth to a baby with hydrocephalus, excessive fluid in the brain cavity, a second aborted at the fourth month of pregnancy and a third aborted at the sixth month. Of 18 babies born to mothers who had flu between the fourth and sixth months of pregnancy, one baby had congenital heart disease and another baby died of bronchopneumonia. Of the 13 mothers who had flu during the last three months of pregnancy, one gave birth to a baby with hydrocephalus and spina bifida, a cleft in the vertebral column.

Fourteen percent of the babies born to the 43 women were abnormal compared to only five percent of the babies in the "control" group.

It therefore seems "reasonable to suggest that there may be an association between Asian flu in pregnancy and congenital abnormality," Dr. Pleydell concludes.

Dr. Pleydell is now County Medical Officer of Health, Oxfordshire.

Science News Letter, February 20, 1960

BIOLOGY

Discover Deep Sea Fish Off Southern California

A NEW SPECIES of long, black, deep-sea fish has been discovered off the coast of southern California.

Known scientifically as *Lestidium johnfitchi*, it resembles a small barracuda in appearance, but is not closely related to that voracious species. It was caught in a net full of jack mackerel at a depth of about 90 feet.

The fish, which has a long, slender body with 98 vertebrae, was discovered by John E. Fitch (hence the name) of the California Department of Fish and Game. It is reported in Copeia, 284, 1959, journal of the American Society of Ichthyologists and Herpetologists, by Robert R. Rofen of the George Vanderbilt Foundation at Stanford University, Stanford, Calif.

Two other marine species are described for the first time in the same issue of the journal.

Victor G. Springer of the Florida State Board of Conservation Marine Laboratory, St. Petersburg, reports discovery in the Caribbean Sea of a small three-inch reef fish. It resembles the scaled blennies and has been given the scientific name *Labrisomus filamentosus* because of its long, filamentous first three dorsal spines.

Discovery of a new eel from a coral head off the coast of southern Japan is reported by Kiyomatsu Matsubara and Hirotochi Asano of Kyoto University, Maizuru, Japan. About 10 inches long, it has been called *Kaupichthys japonicus*.

Science News Letter, February 20, 1960

IN SCIENCE

PUBLIC HEALTH

Launch Allergy Program To Aid Sufferers

A NATION-WIDE effort is under way to help the 17,000,000 Americans who suffer from allergies.

Its aim is isolation and standardization of the precise substances—called allergens—that cause allergic symptoms such as sneezing, asthma and rashes.

A committee of the U. S. Public Health Service's National Institutes of Health, consisting of allergists and immunochemists from a number of medical institutions, will direct the program. Its chairman is Dr. Dan H. Campbell of the California Institute of Technology in Pasadena, Calif.

Because it is the number-one offender allergically, ragweed will be studied first. Several pounds of pollen from dwarf ragweed plants will be dried at room temperature in a vacuum, which should allow it to retain its allergen potency for many years.

The products of the pollen will be broken apart and tested on hundreds of persons. Dr. Campbell is convinced that a certain fraction of ragweed is by far the chief culprit in the plant.

After the committee has succeeded in standardizing ragweed, it will start on grasses, including Bermuda grass. Another early target of the committee will be ordinary house dust, which contains a certain polysaccharide believed to be the chief offender from this source of hay fever.

The program has been planned for a year and the committee believes it has the full cooperation of clinical allergists and researchers throughout the country. Success of the project is expected to require years of concentrated effort.

Science News Letter, February 20, 1960

PHYSICS

First-Graders Could Learn Nuclear Physics

FIRST-GRADERS might profitably be taught fundamental nuclear physics, Dr. Donald J. Hughes, senior physicist at Brookhaven National Laboratory, Upton, N. Y., said.

He reported that even nuclear physicists find it difficult to think in terms of the inside of an atom because "common sense," based on experiences in the larger world of man, interferes.

Much of the "strange stuff" about the atom could be grasped at age six, he told science writers at a seminar at Ardsley-on-Hudson, N. Y. Children can grasp the unorthodox, he said, and perhaps grow up without the mental blocks adult experts admit to.

Science News Letter, February 20, 1960

CE FIELDS

MEDICINE

Seven-Year-Old Dies After Skunk Bite

A SEVEN-YEAR-OLD BOY was bitten by a skunk on the left index finger last September near his home at Port Perry, Ontario, Canada.

The wounded finger was cleansed and dressed, and the boy received tetanus toxoid just hours after the mishap. The animal was not caught for virological examination. More than three weeks passed without incident to the boy, four doctors report in the Canadian Medical Association Journal, 82: 315, 1960.

However, on approximately the 23rd day after the boy was bitten, he complained of a burning sensation over his body coupled with extreme sensitivity to pain. Within ten more days the boy was suffering shooting pains in his arms and body.

He was unable to sit up and soon became weak. Two days later he entered Toronto's Hospital for Sick Children where he grew progressively worse, lost consciousness and, on the third day of hospitalization, died.

Examination of the child's central nervous system revealed presence of Negri bodies, conclusive proof of rabies. At no time had the child exhibited symptoms of hydrophobia, fear of drinking water, the authors pointed out.

Less than 50% of persons bit by animals confirmed as rabid by laboratory tests contract rabies. This little boy was one of that number.

The case is reported by Drs. D. M. McLean, V. W. Krause, W. M. Wilson and W. A. Hawke, all from the Toronto hospital.

Science News Letter, February 20, 1960

MEDICINE

"Stomach Flu" Is Not Influenza at All

IF, DURING this flu season, you have stomach or intestinal "flu," chances are you do not have influenza at all.

Nausea and vomiting, typical of so-called "stomach flu," occur in only every tenth case of infection from true influenza virus, Drs. George Gee Jackson and Harry F. Dowling report.

The chief symptoms of influenza are, by medical statistics as well as the recollection of many millions of nonprofessionals, fever, headache and general discomfort. These symptoms affect 80% to 90% of influenza victims, the University of Illinois College of Medicine scientists reported. They are co-authors of an article on acute respiratory infections in the World-Wide Abstracts of General Medicine, 3:8, 1960.

Influenza is self-limited, usually lasting

three to four days. Severe influenza infection can produce rapid death. In other patients, however, prostration and weakness may last for days or weeks after the fever and respiratory symptoms have gone.

Gastrointestinal symptoms, except perhaps with influenza C virus, are not characteristic of influenza infection, the Chicago physicians said. Thus the term gastrointestinal flu is a misnomer.

The cause of common acute respiratory infections remains unknown and not identifiable in four out of five cases, they reported.

However, the rapid advances being made in our knowledge of the viral causes will lead to better methods of recognition, treatment and prevention, they predicted. Antibiotics already available permit effective treatment of most of the bacterial infections.

In both known and unknown types of infection, they said, the family doctor is the person who must coordinate the knowledge and institute the appropriate use of drugs and vaccines.

Science News Letter, February 20, 1960

ANTHROPOLOGY

Tooth Linked With "Nutcracker Man"

A GIANT TOOTH, reported found in 1958, and thought at the time to be related to that of Peking Man and Heidelberg Man, is now believed by its discoverer, Dr. L. S. B. Leakey, to be that of a descendant of "Nutcracker Man," or *Zinjanthropus*, a primitive man more than 600,000 years old.

Zinjanthropus boisei was found in Olduvai Gorge, Tanganyika, East Africa, in July, 1959, about a year after the giant tooth came to light. Dr. Leakey of Coryndon Museum, Nairobi, Kenya, named the *Zinjanthropus*, also called "Nutcracker Man" because of his huge, human-type teeth.

Some authorities conclude that the molar found in 1958 belonged to one of the australopithecines, a primitive group of Near-Men that lived even earlier than *Zinjanthropus*.

With the giant molar was also found a canine tooth. Dr. Leakey believes that the relative size of the molar to the canine is comparable to that of *Zinjanthropus* and, to a much lesser extent, to that of the australopithecines.

The man to whom they belonged may well have been a descendant of *Zinjanthropus* and a man of a more modern type, Dr. Leakey reports in *Nature*, 185:408, 1960.

The australopithecines are not generally accepted as true men, because, although they had many human traits, they had very small brains. Their pebble tools have been termed makeshifts by anthropologists and investigators in the field.

Yet some anthropologists now believe their pebble tools were the first crafted tools, and that the australopithecines spread widely and evolved into a type with a larger brain such as Peking Man.

Science News Letter, February 20, 1960

MEDICINE

Tranquilizers Predicted As New Suicide Method

TRANQUILIZERS are becoming more popular as a method of committing suicide, a New York doctor reports.

Just as the barbiturates superseded bichloride of mercury in 1935, so it is safe to predict that tranquilizers may one day soon replace the barbiturates as an important agent of choice in suicide, Dr. Joseph Hirsh predicts in *Mental Hygiene*, 44:3, 1960.

The Yeshiva University associate professor refers to seven reports of overdoses of meprobamate and their poisoning effects.

There has been little actual change in the fashions of suiciding over the centuries, he notes. The basic methods still involve the use of cutting and stabbing instruments, guns, crushing as a consequence of leaping from a height or beneath a vehicle, various methods of traumatic asphyxiation and poisons.

A breakdown of these methods among some 32,000 suicides in New York City between 1925 and 1954 reveal that:

Gas was the choice for 11,038; hanging for 6,241; jumping from heights, 4,680; poison, 4,104; firearms, 2,848; cutting and stabbing, 1,150. The remainder was divided among drowning, crushing (beneath trains) and other methods.

Science News Letter, February 20, 1960

OCEANOGRAPHY

Silicon Isotope May Date Ocean Phenomena

A RADIOACTIVE isotope of silicon that shows promise as a means for dating oceanographic phenomena has been found in marine sponges in the Gulf of California.

Known as silicon-32, the isotope is produced by cosmic rays and has a half-life of roughly 710 years. It is believed to be found principally in the oceans, deposited there by rain.

Discovery of the isotope in the sponges is reported in *Science*, 131:332, 1960, by Drs. Devendra Lal, Edward D. Goldberg and Minoru Koide of the Scripps Institution of Oceanography, La Jolla, Calif.

Such isotopes as carbon-14, hydrogen-3, beryllium-10, and phosphorus-32, also produced by cosmic rays, have previously led, on the basis of their distribution and concentration in different areas of the earth, to many significant concepts in geochemistry and geophysics. It is hoped that silicon-32 will prove equally valuable.

Its use as a tracer could facilitate studies of mixing times between deep water and surface water, the scientists report. It could also be used to study ages of the polar ice caps, rates of accumulation of rapidly growing siliceous sediments, individual characteristics of water masses within oceans, and changes in cosmic ray intensity with time during the last few thousand years.

Science News Letter, February 20, 1960