

MEDICINE

Water on Brain Due to Faulty Choroid Plexus

► **HYDROCEPHALUS**, or water on the brain, may be due, in part, to a choroid plexus that does not function properly.

The choroid plexus is a slender, lobed structure that extends into the hollows of the brain. It contains interlaced blood vessels and is covered with the same special type of cells found in the central canal of the spinal cord.

Drs. Virginia M. Tennyson and George D. Pappas of Columbia University's College of Physicians and Surgeons, New York, reported that the choroid plexus appears to have a dual role. It secretes cerebrospinal fluid, a function that matures after birth, and it absorbs certain substances from the hollow spaces of the brain, a function present at all ages.

Dr. Tennyson told doctors attending a symposium on congenital malformations in Oklahoma City that in rabbits made hydrocephalic by vitamin A deficiency, certain irregularities appeared in the nuclei of the cells in the choroid plexus itself and a glue-like mat replaced much of the special covering.

There was no indication that the plexus was secreting abnormal amounts of fluid, but reabsorption of at least one substance, thorium dioxide, was greatly decreased in the hydrocephalic rabbits.

Just what these findings mean is a bit uncertain at present, Dr. Tennyson said, because the role reabsorption plays in these cells is not known even in normal rabbits.

• Science News Letter, 79:88 February 11, 1961

STATISTICS

Released Prestige Polls Said to Be Valid Samples

► **THE PRESTIGE POLLS** showing that the "standing of the United States is at a record low" released by the U. S. Information Agency, are considered a valid sample of public opinion in western European and other countries around the world.

George H. Gallup Jr. of the American Institute of Public Opinion, popularly called the Gallup Poll, said the reports just released by the USIA are based on reliable polls since this agency is very careful to obtain the best information available.

He said that polls taken by 22 organizations affiliated with the Gallup Poll through the International Association of Public Opinion Institute in 30 countries and regions use standard procedures for their polling.

Samples are taken from all walks of life, in the proportion they occur in the census figures, and from all parts of a country. Any one person has as much chance to be polled as any other.

Mr. Gallup said that part of the report released by the USIA is based on Gallup polls. One poll asking whether the U. S. or Russia is likely to be ahead militarily or scientifically in ten years showed that a plurality believed Russia would be ahead.

In another Gallup poll taken, major European countries believed that U. S. prestige had declined. Only in cities such as Athens, Madrid, Saigon and Manila has U. S. prestige increased during the past year.

In a Gallup poll taken recently in the U. S. asking if Americans believed U. S. prestige had increased or decreased, 22% believed it had increased, 45% believed it had decreased, 23% thought it was the same, while 10% had no opinion.

When asked if he believed or knew of any evidence that showed that anyone was influenced by polls to change his mind, Mr. Gallup said he did not. He quoted the classical example of the prediction by Gallup and other pollsters of the presidential victory by Dewey in 1948. Although the polls kept predicting the Dewey victory, no one seemed influenced to change his mind and Truman won.

• Science News Letter, 79:88 February 11, 1961

NATURAL RESOURCES

Atomic Clock Measures Desert Water Supply

► **THE AMOUNT** of water available to a thirsty population living in hot, dry climates can be measured by determining the water's age.

Carbon-14 dating of underground water supplies tapped by wells tells scientists how much water can be removed safely without exhausting the supply, K. O. Munnich II of the Physikalisches Institut der Universität, Heidelberg, Germany, told the combined New York Academy of Sciences and American Meteorological Society meeting in New York.

If the water is young in age, much rain water must be continually seeping into the ground, replenishing the water supply, the scientist said. Older or "fossil" water indicates that the water supply will be quickly depleted because no water in recent years has penetrated to the underground reservoir.

Other sources of water will then be needed, or a planned program for withdrawing water must be started.

The carbon-14 method is the "atomic clock" used for dating objects of geological and archaeological significance. The dating of the Dead Sea Scrolls is one of the accomplishments achieved by the dating method.

• Science News Letter, 79:88 February 11, 1961

TECHNOLOGY

Industrial Research: \$9.4 Billion

► **U. S. INDUSTRY** spent \$9.4 billion for scientific research and development in 1959, a 15% increase from the previous year, the National Science Foundation reported. More than half of the total, or \$5.4 billion, came from Federal funds. In recent years the Government has been spending large sums for research and development programs. Funds for industrial basic research amounted to \$344,000,000, or four percent of the total.

• Science News Letter, 79:88 February 11, 1961

IN SCIEN

VOLCANOLOGY

Mt. Etna in Italy Erupts After Six Months Quiet

► **THE VOLCANO** Mt. Etna on the island of Sicily erupted recently.

The Italian Embassy in Washington, D. C., reported that the rumble from the erupting mountain was heard in all the small villages on the sides of the volcano. Incandescent debris was hurled out of the crater at an increasing rate.

Scientists observed a small eruption of lava from a small cone on the northeast side of the main crater in mid-January. This lava slowly descended down the mountain toward the valley Valle Del Leone.

No cycle of eruption is known. If the eruption threatens their homes, the inhabitants usually leave. However, they always come back and rebuild their villages on the same spot again, even if everything has been buried in lava because lava enriches the soil.

The last eruption of Mt. Etna occurred in July, 1960, the largest so far this century.

• Science News Letter, 79:88 February 11, 1961

METEOROLOGY

Satellite Data Aid Weather Forecasting

► **WEATHER INFORMATION** transmitted by satellites will "inevitably" lead to more accurate weather forecasting, the American Meteorological Society reported.

An official statement concerning the effects of weather satellites on the accuracy of weather forecasts was issued by the society in New York because reports have varied so widely.

As satellite observations become a more integral part of weather data, the quality of weather predictions will also improve, the society said. Satellites enable meteorologists to view weather patterns more comprehensively in regions where adequate observations do not exist. However, the society cautioned, satellites report only what is seen; they do not issue forecasts.

Weather predictions for coastal regions will be improved through satellite observations. Although there are many ground stations dotting United States coastlines, virtually no information is available from more than a few miles offshore. Satellite observations can plug up this gap by radioing back information about this uncharted part of the atmosphere.

The ultimate role of the satellite is a research tool in broadening the understanding of the ways in which weather systems develop and move, the society reported.

• Science News Letter, 79:88 February 11, 1961

CE FIELDS

ASTRONOMY

Total Solar Eclipse Occurs on Feb. 15

► A TOTAL ECLIPSE of the sun that can be seen in all of Europe, North Africa and most of Asia will occur Feb. 15.

The eclipse begins at sunrise along a line from northern Norway to southern France and North Africa. The entire face of the sun will be covered by the moon at 3:43 a.m. EST.

The path of total eclipse, where the sun will be seen completely covered by the moon, reaches from southern France across central Italy, the Balkan peninsula, and into Russia and Siberia. The eclipse ends at 5:30 a.m. EST.

No part of the eclipse will be seen in the United States. However, it will be of great importance to astronomers the world over as totality will occur in areas where large astronomical observatories are located. Thus direct studies with large optical telescopes can be made.

Yugoslavia newspapers report that the total eclipse will be televised by Eurovision, Western Europe's international TV hookup.

Besides the total eclipse of the sun on Feb. 15, there will be one other solar eclipse in 1961. On Aug. 11, an annular eclipse will occur. In annular eclipses a thin ring of sunlight is visible around the dark moon.

Two lunar eclipses will take place in 1961. On March 2 and Aug. 26, partial eclipses of the moon can be observed. In lunar eclipses, the moon passes through the earth's shadow opposite the sun.

• Science News Letter, 79:89 February 11, 1961

MEDICINE

Oklahoma Doctors Fight Congenital Malformation

► AN ALL-OUT WAR on birth defects is planned by medical specialists at the University of Oklahoma School of Medicine, Oklahoma City.

Dr. Harris D. Riley Jr., head of the University's department of pediatrics, said that 250,000 children or one in 16 born each year in this country have significant congenital or birth defects, and about 34,000 infants die each year from these causes. Until recently, Dr. Riley reported, the field of congenital malformations has been almost completely neglected.

At first, the new birth defects clinical study center being set up will concentrate on repairing or relieving defects in which the brain and spinal cord are pushed into places where they do not belong. Such malformations include: encephalocele, protrusion of part of the brain through the skull; meningomyelocele, protrusion of the spinal cord and nerve roots through a bone fault

in the spinal column; and Arnold-Chiari malformation, protrusion of parts of the brain into the spinal canal.

One innovation of the program is that all the specialists involved in any one case will see the patient at the same time, to confer with each other and decide on a course of treatment as soon after the infant's birth as possible.

Dr. Lucien Kavan, also of the University of Oklahoma School of Medicine, reported that children with meningomyelocele, for example, almost always have difficulty controlling the urinary bladder and that only in recent years has surgical correction been attempted. One corrective procedure that has had good results is to transplant the urine tube into an isolated segment of the intestine, which is then brought out through the abdomen.

Dr. William L. Waldrop, associate clinical professor of orthopedic surgery, said the child with meningomyelocele also has a tendency toward club feet and that correction cannot be attempted until the patient is five to eight years old.

• Science News Letter, 79:89 February 11, 1961

ANTHROPOLOGY

Picture Test Can Show Difference of Ideas

► A NEW WAY of testing how differently people think about the same things is being developed.

Drs. Walter R. Goldschmidt of the University of California, Los Angeles, and Robert B. Edgerton of Pacific State Hospital, Pomona, Calif., are developing the picture test. The idea came from their studies of the differing ideas herders and farmers in East Africa have about such things as what clothes a man should wear.

A series of cards was developed and shown to 44 adult male Menomini Indians of Wisconsin from different cultural levels, the scientists report in the *American Anthropologist*, 63:26, 1961. Their value test differs from psychological picture tests, which are aimed at evoking fantasy, since the pictures of this test try to simulate reality.

They state that the pictures will have to be re-drawn for each culture to conform with different ideas of behavior and cultural objects. However, the scientists hope to develop a set of value choices that can be translated from one culture to another.

In testing the Menomini, situations were depicted that pertained specifically to their life and culture. Nevertheless, in many cases the subjects misunderstood the situation shown and as a result could not give an "honest" response.

One card shows a car with three men being driven down a road. One man is waving at a girl walking along the road. Two girls are walking behind the girl. This picture was unflinchingly thought to be a pick-up scene and as such was condemned by nearly all the subjects. The picture was meant to obtain value judgments on extra-marital sexual activity.

• Science News Letter, 79:89 February 11, 1961

PHYSICS

UAR Atomic Reactor Being Built by USSR

► THE UNITED ARAB REPUBLIC is building an atomic plant in Cairo with technical and financial support from the Soviet Union, a spokesman from the UAR Embassy reported.

"The reactor is for peaceful use," Mohamed Nagib, a member of the UAR press office, said. The USSR is making the construction possible, he said, but no details were available as to the size or type of the Cairo nuclear reactor.

The information about the reactor is so secret and confidential that "I don't believe any of the details are available to any of our Embassy staff," Mr. Nagib explained.

According to experts in the atomic energy field, the Cairo reactor, like all atomic power reactors, has the capability of producing fissile material used in the production of atomic weapons.

Official concern was expressed by the United States Department of State recently over reports that Israel, with French support, was constructing an atomic plant capable of producing such fissile material. No similar concern has been evidenced by State Department officials over the Russian-built Cairo reactor.

"We have heard the reports about the Cairo reactor; but we have no substantiation of it," State Department press officer, Francis Tully, said.

A nuclear reactor, even one limited in size, is not easily hidden, the State Department spokesman admitted. But when asked whether any of the U.S. embassy or government officials in Cairo had affirmed or denied the existence of the Soviet-built reactor in Cairo, he said, "We have no way of knowing whether this is true or not."

• Science News Letter, 79:89 February 11, 1961

PUBLIC HEALTH

Polio May Be Vanishing In Britain, Figures Show

► POLIOMYELITIS, like other killer diseases before it, may be approaching the vanishing point in Britain, as in the U. S. There was a remarkable decline in its prevalence last year.

For the first time in 14 years, the number of cases reported was below 1,000. They totaled 516, with 34 deaths. This compared with 1,326 cases and 86 deaths the year before.

In 1958 there were 2,315 cases with 147 deaths, while ten years ago, in 1950, cases totaled 7,760, with 755 deaths. Ministry of Health and Medical Research Council experts concede that much of the improvement can be attributed to the success of the Salk vaccination campaign.

Further improvement may be looked for in the future because, from the beginning of 1961, vaccination has been available to those more than 40 years of age, and the killed injected vaccine may be later supplemented by the live oral one.

• Science News Letter, 79:89 February 11, 1961