

Brain Fluid Pumped Between Two Monkeys

A PURDUE UNIVERSITY psychologist has managed to link two live monkeys with plastic tubing and pump brain fluid directly from one to the other.

The results were a change in the recipient monkey's body temperature and new proof concerning the role of the hypothalamus in basic body functions, Dr. Robert D. Myers reported to a meeting of the British Physiological Society in London.

The prune-sized hypothalamus is believed to be the control center for hunger, sleep and thirst impulses, body temperature and a host of visceral reactions that accompany rage. "Sham-rage," in fact, is the term scientists often use to describe this hypothalamic function.

Dr. Myers' original intent was to lower the second monkey's body temperature by packing the donor animal in ice, he said. Paradoxically, instead of going down, the monkey's temperature went up some two degrees after he receive the cerebral fluid transfer.

Dr. Myers said he has no explanation for the inverse effect, but said his experiment proves cerebro-spinal fluid, like blood, is compatible between two individuals, unlike other substances which a host body might reject.

MEDICINE

Surgeons Transplant Earbones in Cats

SURGEONS are transplanting earbones in cats in research to combat some forms of human deafness. They are also freezing and storing cat earbones to assess the value of earbone banks for human beings.

The incus (anvil), a tiny middle-ear bone that magnifies and conducts sound, has been involved in the successful transplant operations. A Sydney ear, nose and throat specialist reported for the first time on the successful transplant at sessions of the Otolaryngological Society.

More than 100 ear, nose and throat surgeons from Australia, New Zealand, the United Kingdom and Canada attended the Society's five-day scientific meetings at Sydney University. A Society spokesman said the specialist had presented his report on the transplantation of cat earbone after a study tour to Wayne University, Detroit.

Although the operation has so far been done only on cats, a refining process of the technique would prove a significant advance in the surgical treatment of some forms of deafness, he said.

The spokesman said the surgeons removed the incus bone from one cat and planted it in the other. Success of the technique suggested it was possible

to remove a diseased or destroyed incus bone from a human being and give him a healthy earbone.

New bone grew where the incus had been removed. The new bone had replaced the grafted piece without causing any harm or disability.

SOCIOLOGY

'Human Brokers' Recommended

"HUMAN BROKERS" are needed to put people with problems in touch with the many agencies, both governmental and private, that have been established to help them.

Too often the help is there but the people who need it many times do not know that it is available. Even when they do know that aid can be obtained, many do not know how to go about getting it.

That is why the plea for a new profession of human brokers was sounded by Dr. Leonard J. Duhl, special assistant to the Secretary, Department of Housing and Urban Development. Dr. Duhl is a psychoanalyst who has turned his attention from the patient on the couch to the human and social problems of living in large cities.

A human broker would serve his community much as the often-maligned "ward-heeler" of the 19th century helped his people solve problems.

Among the major crises affecting city dwellers, Dr. Duhl said, are poverty, the lack of communication between groups, air and water pollution, urban renewal and the hit-and-miss construction of freeways. He called for "new ways to deal with the stresses and crises" of modern life. A human broker would be in a position to detect an imminent crisis and intervene, which might prevent such disorders as the Watts riots from occurring.

The problems of the city, Dr. Duhl told a seminar of science writers at the Mountain View Hotel in Gatlinburg, Tenn., are "major and of infinite complexity." They are being dealt with piecemeal, but there is virtually no communication between the various programs at the community level.

ZOOLOGY

Spores Give Clues To Oyster Killer

A CLUE has been uncovered in the search for the elusive "murderers" of the East Coast oyster.

The clue is in the shape of a slightly ovoid spore, which is a one-celled organism in the resting stage in the life cycle of the oyster parasite called MSX—Multinucleate Sphere of Unknown Taxonomic Position.

The disease, also known as the Delaware Bay Disease, has been causing extensive oyster deaths along the

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Middle Atlantic Coast since 1957. During the past decade the MSX blight has almost wiped out the once flourishing oyster industry in Delaware Bay, N.J., and has caused severe economic hardship in the lower Chesapeake Bay. The blight has been spreading northward in the Bay area because of the Northeastern drought, which has depleted fresh flowing rivers and hence increased infiltration of salty seawater into bays and estuaries.

The MSX parasite seems to thrive only when the salt content is more than half that of normal sea water.

The fatal organism is a protozoan parasite belonging to a group known as Haplosporidia. It was recently named *Minchinia nelsoni* by Rutgers University scientists working on the oyster disease program at the Bureau of Commercial Fisheries Laboratory at Oxford, Md.

Research teams for years have been trying to track down the behavior and life cycle of the disease in order to know how to control it.

The recent discovery is significant because the spores—about .0003 inch long and .0002 inch wide—are considered the early stage in the yet undefined life cycle of the disease, explained a researcher of the Bureau of Commercial Fisheries, part of the Department of the Interior.

The deadly organism has been difficult to track down because of its various forms in various stages of its life. Also, scientists have been able to find it only in its natural habitat, and have been unable to grow cultures of it in the laboratory.

TECHNOLOGY

Radioactivity Leakage No Test Ban Violation

THE UNITED STATES has admitted to Russia that a very "small, small amount" of radioactivity leaked into the atmosphere from a recent underground test, but said it was not enough to violate the test ban treaty.

The treaty allows underground tests if radioactivity is not carried across national borders. Leakage from the Sept. 12 explosion in Nevada was limited to the immediate testing area, according to the State Department, which is also "looking into" a Russian explosion of Oct. 27.

Both countries have had previous experiences with radioactivity "venting" through the earth's surface, but neither has been inclined to create a major issue.

PUBLIC HEALTH

Astronauts' Water Problem Could Ruin Whole Mission

INFECTIOUS HEPATITIS is a threat in space, as well as on the ground, a Maryland engineer warns.

Dr. John T. Cookson Jr., an environmental health engineer who is working on a Public Health Service grant in an effort to free drinking water from viruses, points out that future space stations will have to have a recycling system that will take waste water and purify it into drinking water. They share the same problem with arid places on earth.

When waste water has to be treated and put back into the water cycle, he explained, a heavier concentration of viruses becomes more likely.

The minute size of viruses makes it extremely difficult to remove them from water by filtration, so Dr. Cookson is searching for another method of removal. His earlier research at California Institute of Technology, Pasadena, got a partial answer through work with activated carbon. The scientific explanation of its effectiveness in controlling certain viruses is this:

"We know for certain that viruses that have tail fiber, such as the intestinal Escherichia coli bacteriophage T 4 (E. Coli), attach themselves to activated carbon through an electrostatic attraction," he said. Now he is seeking to "substantiate the mass transfer theory of aerosol filtration and its application and correlation to liquid passing through a solid bed."

If his experiments prove successful he will have a mathematical model for calculating the penetration of viruses, which could then be used by others to devise a filtration system to reclaim waste water and provide another step in filtering drinking water.

PSYCHOLOGY

Noise Machine To Cure Stammering

A DEVICE to stop people stammering is being developed here in South Wales.

Worn like a hearing aid, it shoots a short burst of sound into the stammerer's ear as he begins to speak each word—so that he cannot hear his own voice.

"Stammering is often caused because

the person hears himself start to speak," said Professor William Gosling, professor of electrical engineering at the University College of Swansea.

"If a buzzer is sounded into the stammerer's ear, it drowns out the sound of his own voice." Dr. Gosling claims the sound method helps three-fourths of the stammerers to quit their habit.

"If you can't hear your own voice, it is difficult to know how loud you are speaking. Most people start to shout. A few reduce their voices to a whisper," he said.

Dr. Gosling hopes to drown out only the beginning of each word so that the stammerer can regulate the loudness of his voice.

"We hope to have finished the experimental work by next summer," Professor Gosling added. The stammerer would have a throat microphone which would recognize when he was about to speak and start the buzzer but only for a fraction of a second.

BIOCHEMISTRY

Study Shows Biochemical Link

BODY CHEMISTRY may determine who can tolerate sensory deprivation and restricted activity for days at a time and who cannot.

Evidence for a fundamental biological difference came from a study of 31 Canadian university students who contracted to spend one week in an isolation chamber, equipped with translucent goggles and a set of earmuffs.

Only 18 of the group lasted the full week. The other 13 quit. Examination of their urine revealed that the quitters excreted a considerably higher level of adrenaline than those who stuck it out.

This probably reflected growing tension and stress, reported Drs. John P. Zubek and W. Schutte of the University of Manitoba.

Since the quitters normally had a lower baseline level of adrenaline than the others, it would appear there is a "constitutional" difference between those who can stand prolonged isolation and sensory starvation and those who can't, said the researchers.

The two groups, however, did not seem to differ in personality according to four separate tests.

The Canadian study appears to correspond with work done on pain tolerance by Dr. Asenath Petrie, a British psychologist, during her tenure at Harvard University.

People can be grouped into three categories according to their tolerance for pain and sensory deprivation, she found. One group cannot stand pain well, but has considerable tolerance for confinement and sensory deprivation.

Another tolerates pain, but not sensory deprivation or confinement, perhaps like the Canadian quitters. The

third group falls somewhere between the two extremes.

The Canadian study was published in the Journal of Abnormal Psychology.

NEPHROLOGY

Surgeon Urges Kidneys Be Taken From Dead

A CAMBRIDGE UNIVERSITY surgeon has called for a change in English law that would allow good kidneys to be taken from dead patients for transplantation.

With the development of kidney tissue-typing, analogous to blood grouping, it should soon be possible to use kidneys from the dead with results at least equal to transplantations from close living relatives, said Dr. R. Y. Calne, professor of surgery.

Under current English law, kidneys can only be taken from the dead with written permission from the patient himself or the next of kin.

Dr. Calne proposed the transplants be allowed as a matter of course unless expressly forbidden.

Taking organs from live relatives is not without risk to the donor, he pointed out. If this practice continues, there are sure to be fatalities, he said.

MEDICINE

Acupuncture Called Feasible

AS A METHOD of curing ills, the Chinese practice of sticking needles under the skin—acupuncture—is medically plausible, according to Dr. Joseph Needham of the University of Cambridge, England.

Acupuncture could stimulate the sympathetic nervous system and in turn the endocrine glands, strengthening body resistance to disease, said Dr. Needham. He spoke at the opening of an exhibition on traditional Chinese medicine at London's Wellcome Historical medical museum.

Western physicians attending the exhibition were ready to believe acupuncture might be good for sciatica, rheumatism and arthritis, but doubted its effect on infectious diseases.

But, said Dr. Needham, "if it is true you can raise the resistive power of the body by increasing the cortisone or antibody levels, the claim for acupuncture would be justified."

Dr. Needham, an authority on Chinese science and culture, who last visited China in 1964, suggested that China would welcome an invitation from the West to demonstrate the needle method.

The exhibition also included a number of small ivory dolls which Chinese women used to preserve their modesty. Instead of undressing they would show doctors spots on the dolls.