

PHYSIOLOGY

Measures Temperature Change In Brain While It Works

Illuminating Eyes Warms Brain's Optic Pathways One Hundredth Degree; Pressure Heats Touch Centers

MEASURING the heat of a brain-wave is the latest achievement of Dr. R. W. Gerard of the University of Chicago, who 10 years ago, with Dr. A. V. Hill, British Nobel prizeman, first measured the heat of a nerve message.

In the past four years much attention has been aroused since scientists found it possible to measure the electricity which the brain produces when it works. More recently, Dr. Gerard reported to the American Physiological Society, the amount of oxygen used by portions devoted to the senses of sight and touch has been measured. He has now been able, with a thermometer which records a change in temperature of 0.00075 degrees Centigrade (0.0014 degrees Fahrenheit) to measure the temperature changes of the living brain.

Electric Thermometer

The thermometer is an electrical one, and the "bulb" is the size of a fine

needle. This is inserted into the particular part of the brain of the laboratory animal to be studied. When it is desired to find out the heat involved in seeing, the needle goes into the paths that lead from the optic nerves and the eye, for instance, where it is located within one twenty-fifth of an inch.

Vision Makes Heat

Illuminating the eyes of the experimental animal, the experimenters found that these optic pathways in the brain began, within a minute, to get warmer. For two minutes more the temperature rose, until it was a hundredth of a degree above normal for the resting brain. Four minutes after this, the temperature was again that of the resting brain.

The Chicago physiologists found a similar response to pressing the paw, when the tiny thermometer bulb was placed in that part of the brain which has to do with touch. In some parts of

the brain, both pressing and "seeing" had the effect of raising the brain temperature.

The investigators have evidence that these changes in the brain temperature are in part due to an increase of blood flow to the portion of the brain used in sight, when the eye is illuminated, and to that portion which is used to distinguish touch when the animal is pinched; but in part due to the actual work done by the nerve cells in the brain.

Anesthetic Brings Change

Further experiments showed that more blood goes to the brain when there is too little oxygen or too much carbon dioxide in the blood. When their animals were anesthetized with ether, the scientists found that the brain temperatures rose five-hundredths of a degree, but when the anesthesia was brought about by the chemical nembutal, this was reversed, and the brain temperature went down.

H. Serota collaborated in the researches with Dr. Gerard.

Scientists hope that experiments of this nature will eventually lead to a better understanding of how our brains work, for example, in the process of understanding.

Science News Letter, September 5, 1936

MEDICINE

New Infant Burn Room Opened in Ohio Hospital

SCREAMING children brought to the General Hospital in Cincinnati when suffering from painful burns and scalds soon are made to laugh and temporarily forget their injuries in the new burn-treatment room recently opened. Swifter and easier emergency treatment in the crucial initial stages of burns is the result.

Animal cut-outs of fairyland characters dot the walls. Tubs for bathing the children with soothing liquids are in brilliant colors as are the tile floors. A huge electric kaleidoscope flashes hundreds of colored designs on the walls.

Dr. H. Jerry Lavender of the hospital staff designed the so-called "fun room," which is working out successfully. A visit to the hospital shows children, many of them convalescing from serious burns, in high spirits, laughing and shouting about Peter Rabbit, Little Bo Peep, Humpty Dumpty and the more modern Mickey Mouse whose antics are pasted on the walls.

Science News Letter, September 5, 1936



HAPPY AGAIN

Infants in special "burn" room at General Hospital at Cincinnati, O., forget their suffering and thus aid physicians to obtain speedy treatment. They are bathed in soothing liquids, as shown above, in brilliant-hued tubs.