

## PSYCHIATRY

# Describe "Fusion Center"

► **DISTURBANCE** of one area of the brain can make you not only see double, but hear double. It can also make you think double.

Dr. Max Levin of New York Medical College points to several cases in a report in the *American Journal of Psychiatry* (Aug.). The doubling, he indicates, can be caused by toxic delirium, for example, from too much alcohol, by schizophrenia or by brain tumor. It can also occur when the particular area of the brain is stimulated with electric current.

He quotes a description of an incident which took place in the operating room at the hospital of McGill University, Montreal, Canada. When the doctor counted aloud while stimulating a certain temporal area of the patient's brain, she heard the numbers doubled. As soon as the current was discontinued, the numbers became "single and clear."

Another patient had a brain tumor. She had a son William whom she called Bill. Now she said she had twin sons, Willie and Bill.

It is not correct, Dr. Levin emphasizes, to think of the brain center related to this doubling as a "duplication center." Instead, stimulation of this center acts negatively to throw the fusion mechanism out of order.

When you listen to a sound, it excites two auditory reception areas, one in each side of the brain's cortex. But a higher coordinating mechanism fuses the two auditory

images so that you hear one single sound.

In a similar way the images received by your eyes are fused. If you are normal and healthy you see a single object as only one.

The failure of fusion can also come in thinking as well in sensing. This happened to the patient whose son turned, in her mind, into twins.

Normally a person can tell whether an incongruity is real or only illusory. If John Smith is a son and also a father, only a sick person would say that this cannot be and there must be two John Smiths.

The faulty thinking may involve not only lack of fusion, but also too much fusion. This is what happens when the child tries to pick up the toy pictured in his story book. The child cannot separate mentally the actual toy from its picture.

Science News Letter, August 24, 1957

## EDUCATION

## Tests Alone Do Not Pick Talented Students

► **NEARLY 40%** of England's brightest youngsters go undetected and never reach a university, Sir Cyril Burt, emeritus professor of psychology at the University of London, said in the Walter Van Dyke Bingham lecture delivered at University College, London.

Intelligence tests alone cannot be relied

upon to find these bright students who are so important to our society.

"Predictions based on them show much the same accuracy as the forecasts based on the latest odds for race horses entered for the Derby," he declared.

In this technological age, one of our greatest needs is more research into the problems of mental inheritance and on the discovery of high ability.

The latest research on the microscopic structure of the human brain, carried out in the laboratories at University College, has revealed wide differences in the cell architecture of different brains, but demonstrates that, in the same individual, nerve tissue—like every other tissue, hair, bone, muscle, and skin—tends to be the same throughout, with only minor local variations.

"This, as well as wide-scale statistical inquiries, strongly supports the theory that general mental capacity is far more important than special gifts or aptitudes," Sir Cyril said.

And if differences in this capacity are the result of differences in brain structure, we should expect that, like other physical differences, it could be largely dependent on heredity.

Yet the study of mental heredity, he indicated, has until quite recently, been scandalously neglected.

Science News Letter, August 24, 1957

## BIOLOGY

## Football Players Hurt By Too Early Scrimmage

► **FOOTBALL PLAYERS** would not receive as many early season injuries as they do if they were kept from scrimmaging until they are in prime physical condition, Dr. Don H. O'Donoghue, University of Oklahoma School of Medicine, Oklahoma City, reports in *GP*, a publication of the American Academy of General Practice.

The player must be convinced that a fit body is his best insurance against injury, and he must play with "carefree abandon." The player who fears injury will surely be hurt, Dr. O'Donoghue advises.

In the past the physician was considered to be an athlete's last resort and the general fear was that once the player reached the doctor, his days as an athlete were over.

Too often this turned out to be true since the players were sent to the doctor far beyond the ideal time for immediate treatment.

The doctor also tended to belittle the athlete's desire to return to competition.

The first thing for the physician to determine is whether a boy is physically capable of participating in sports. Dr. O'Donoghue warns fellow physicians that it is almost as bad to be overconservative as to overlook obvious hazards.

Questions like "Does this functional heart murmur really constitute a hazard?" or "Are these bones really over-brittle?" must be answered honestly.

For football, especially, good equipment is essential for protection and will pay for itself by reduced medical expenses and added effectiveness of the players.

Science News Letter, August 24, 1957



**METAL WHISKERS**—"Perfect" metal whiskers, formed by electro-deposition (see SNL, Jan. 12, p. 21), are known for their freedom from flaws and resulting extraordinary strength. Dr. David Vermilyea of General Electric's metallurgy and ceramics research department is shown here adjusting the level of copper sulfate solution and watching through a microscope as copper is deposited on the whisker. The whiskers are initially formed by means of the reduction of copper chloride in hydrogen.