

## PSYCHOLOGY

# Perception of Vertical

► **ALCOHOL**, in spite of the fact that it may destroy a person's balance, making him stagger and weave on his feet, makes no difference in his ability to judge which way is up when he is blindfolded or in the dark.

Studies of the effect, or lack of it, of alcohol and other drugs on perception of the upright were reported by Dr. Cyril M. Franks of Maudsley Hospital, London, at the British Association for the Advancement of Science meeting in Sheffield, England.

In Dr. Franks' experiments, his subjects were placed in a tilted chair in a totally darkened and sound-proofed room completely strange to them. They were then shown a luminous rod and asked to direct the experimenter to rotate it until it looked straight up and down.

There are two ways of knowing which way is up, Dr. Franks explained. One is by looking around you at such objects as trees, doors or windows.

The other is by paying attention to internal cues, such as the feeling of the pull of gravity on the "seat of your pants," as flyers used to say, and by sensations from muscles, joints, viscera and the labyrinth of the ear. In these experiments the subjects

had to depend on the internal sensations only.

Women are consistently worse than men in orientating themselves when they are unable to see external objects.

This suggested to Dr. Franks that personality might influence orientation ability. He first looked for differences between extraverts who are dependent upon the outside world and introverts who are more concerned with internal sensations. The differences did not appear in his experiments.

Then he checked on the possible effects of an extraverting drug, sodium amylal, and benzedrine, which makes a person more introspective. They had no effect on orientation.

Also, contrary to popular belief, alcohol was found to have no effect either.

One personality difference, however, was detected. Neurotics were found to make greater errors than non-neurotic subjects.

Dr. Franks' experiments are an extension and confirmation of experiments begun in the United States by Dr. H. A. Witkin of Kings County Hospital, Brooklyn, N. Y. The two scientists are continuing their international cooperation.

Science News Letter, September 8, 1956

## MEDICINE

# Magnetic Pill Used

► **A BETTER UNDERSTANDING** of ulcers, "butterfly stomach" and other stomach disorders may result from research in which the experimental subjects swallow a tiny magnetic capsule about the size of a vitamin pill.

Studies with the capsule are being carried out by Dr. Marion Wenger, Dr. Theodore Clemens and Bernard Engel, psychologists at the University of California at Los Angeles.

The capsule consists of a tiny magnet, coated with plastic to protect the magnet from corrosion by gastric secretions. Minute movements of the capsule in response to stomach activity can be detected by a sensitive magnetometer and recorded electronically on a chart.

Experiments involving mild psychological stress, such as mental arithmetic and word problems were conducted with more than 200 subjects. Generally, different forms of stimulation caused a slight speed up on stomach contractions, and sleeping resulted in slower contractions.

Twenty percent of the subjects showed a complete blocking of contractions for varying periods following stimulation.

Standard methods of studying stomach movements have involved either barium X-ray techniques or the swallowing of bal-

loons and tubes. The former can be carried on for only short periods because of danger from X-rays. The latter causes considerable discomfort.

It is believed the relatively simple magnetic pill technique will establish patterns of stomach activity in healthy and diseased persons.

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## TECHNOLOGY

# Nuclear Power Station Planned for Scotland

► **AN ATOMIC POWER STATION** expected to cost \$100,000,000 is to be built on the holiday coast of the Firth of Clyde near Glasgow, Scotland, saving that nation an estimated million tons of coal a year.

Plans for the scheme which will supply a quarter of all the electricity needs of Scotland's industrial belt, have been prepared by the South of Scotland Electricity Board. At present, the use is about 2,750,000 tons of coal a year. The new project will save more than a third of this, and may lead to cheaper electricity.

The program will be partially completed by 1961, when the first reactor will go into operation. The second reactor will be ready

by 1962. The two reactors will be capable of providing enough heat to generate 250,000 to 300,000 kilowatts of electricity.

The site most likely to be chosen for the power station is at Ardrossan. A coast site has been selected because of the economies that will be possible by using sea water to eliminate the need for building big and costly cooling towers.

The Board is also considering schemes for pumping sea water to high-level reservoirs during the night, at light-load periods. This water would then be used to generate electricity at peak-load times during the day.

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