

ent functions the cytoplasm may have. They think the cytoplasm receives some necessary materials from the nucleus before it is removed, but what they are and how they are transmitted is unknown.

The research was done in the University's Cancer Research Institute with support from the California division of the American Cancer Society, the National Cancer Institute, and special University cancer research funds.

## All Brain Areas Active

➤ EVERY AREA of the brain produces a movement of some part of the body when the brain area is stimulated. There are no "silent" areas.

Every small area acts both to receive sensation and to cause movement, rather than being either one of sensation or one of movement.

Evidence for this, which is contrary to the classical idea of the brain, was presented by Dr. John C. Lilly of the National Institute of Mental Health at the meeting.

The findings were made on monkeys that were not anesthetized. Tiny electrodes had been implanted in the animals' brains. Electrical stimuli were given through these. The brains suffered no injury as a result.

When stimulus was given to the classical sensory region of the brain, that is a region for receiving sensation, movements to direct the sense organ were produced. For example, stimulus of the acoustic area caused detailed ear movements. Stimulus of the visual area of the brain brought on eye and head movements.

The only brain area from which general excitement of the whole animal could be produced by stimulus was the spinal column area.

## Life Materials Made

➤ LIGHTNING DISCHARGES in the early days of the earth, some three billion years ago, could have produced from atmospheric gases the materials out of which life arose.

Using relatively simple spark coil discharges, Dr. Philip H. Abelson of the Carnegie Institution of Washington's Geophysical Laboratory has manufactured amino acids, building blocks of protein, out of carbon dioxide, nitrogen, hydrogen, water and ammonia in various combinations.

This imitation of possible happenings in the primitive air of our earth when young is part of an attempt to reach back into history and see what could have happened then.

Dr. Abelson also told the meeting there is evidence that the earth's atmosphere half a billion years ago was not much different from what it is today.

One school of scientific inquiry has suggested the earth came alive from the original envelope of gases that survived from the earth's formation out of the primordial matter of the universe.

Dr. Harold C. Urey of the University of Chicago upholds this view and his ex-

periments with Dr. Stanley C. Miller showed that basic materials for living matter could be made from hydrogen, methane and ammonia in a highly reducing atmosphere.

On the other hand, Dr. William W. Rubey of the U. S. Geological Survey has looked into the geological evidence of the origin of the atmosphere and oceans. He suggests that the water, carbon dioxide and nitrogen of our air and seas came out of volcanoes. He finds no evidence for the reducing atmosphere theory.

Dr. Abelson produced such amino acids as alanine, betaalanine, glycine and sarcosine from mixtures of gases, such as carbon dioxide, nitrogen, hydrogen and water; carbon monoxide, nitrogen, hydrogen and water; carbon dioxide, ammonia, hydrogen and water.

He confirmed the earlier work by Dr. Miller, now of Columbia University, obtaining amino acids from a mixture of methane, ammonia and water.

Science News Letter, November 17, 1956

## BIOCHEMISTRY

### Chemicals for Speedy Blood Clot Dissolving

➤ FEVER-PRODUCING CHEMICALS and an activator, or enzyme, from urine are being tried as speedy agents for dissolving dangerous blood clots inside blood vessels.

"Very encouraging" results in treatment of more than 50 patients with the fever-producing chemicals have been obtained by Dr. Kurt N. von Kaulla of the University of Colorado Medical Center, Denver, the American Heart Association reports in New York.

A blood clot inside an artery can cause a heart attack or a "stroke," as most persons today know. Anticlotting medicines help control the condition, so that there is less likelihood of further clots forming.

Needed now is a method for more prompt and effective dissolving of clots already formed. Ordinarily, it may take days or even weeks for a sizable clot to be dissolved.

Meanwhile, the body is simultaneously carrying out another repair process that involves the laying down of scar tissue. This is ordinarily a protective mechanism, but it may harm the inside of a blood vessel by narrowing and distorting the inner surface.

Doctors would like to dissolve clots quickly and completely to help restore normal circulation as fast as possible.

The fever-inducing medicines of bacterial origin, called pyrogens, seem to promise an answer for this problem. They act in humans but not in animals or test tubes. Or the activator, called urokinase, may solve the problem.

Science News Letter, November 17, 1956

The average farm in 1954 consisted of 242 acres, the highest average size shown in any farm census.

## VETERINARY MEDICINE

### Little Value in Giving Thyroprotein to Cows

➤ THYROPROTEIN, containing thyroid gland extract, may stimulate cows to produce more milk for a time, but it has little practical value for most dairy herds, the U. S. Department of Agriculture and Montana scientists find.

The reason is that there is no way to avoid a sharp decline in milk production following removal of the drug from the cows.

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