

## PHYSIOLOGY

**Clotted Blood Forms Capillary-Like Tubes**

**V**ESSELS resembling the minute capillaries through which the blood passes from veins to arteries in the body are formed in masses of blood allowed to coagulate outside the body. Their formation has been observed by Dr. Raymond C. Parker of the Rockefeller Institute for Medical Research.

The tubules are not formed by any "vital" activity of the living cells of the blood, but on the contrary the initiative is taken by purely physical forces in the blood fluid, Dr. Parker explains in the current issue of *Science*, where he describes the phenomenon in detail. After the courses of the tubules have been outlined by currents streaming through the slowly solidifying mass, certain cells around them weave the walls, partly out of their own bodies and partly from fine hair-like processes which they put out.

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## PUBLIC HEALTH

**New Pure Food Bill Greatly Extends Regulation**

**A**T THE DIRECTION of President Roosevelt, Secretary of Agriculture Wallace has sent a draft of proposed legislation for a new national pure food and drug law to Congress.

The limitations of the present law make it impossible to carry out its intention of protecting the public from impure or harmful foods and drugs, Secretary Wallace pointed out in submitting the new bill.

Under the new bill, the Secretary is authorized to set definitions and standards of purity for foods, just as there are now legal standards for official drugs. Under the present law such standards may be set for canned foods only.

False advertising is to be prevented under the new bill. At present there is no way under the Food and Drugs Act to control the serious abuses in this particular field.

The present law prohibits false or misleading statements on the labels of foods and drugs, but under the new bill, labels must tell enough about the product so that the consumer will know what he is getting and can buy intelligently and discriminatingly.

Cosmetics are to be brought under federal control so as to prevent the seri-

ous injuries that have occurred through the sale and use of harmful cosmetic products.

Another important feature of the bill is the provision directed at the sale of drugs labeled as treatments for various diseases. The Food and Drug Administration under the new bill will be able to prevent the sale of such drug products if the claims for them are contrary to general agreement of medical opinion. At present an influenza cure, for example, which physicians agree will not remedy influenza cannot be kept off the market unless the Food and Drug Administration can prove that the claims for the remedy are not only false but made with the intention of deceiving the public.

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## MEDICINE

**Optimism Best Aid Against Rheumatoid Arthritis**

**A**CHEERFUL optimistic temperament is a great asset for the patient fighting rheumatoid arthritis, Dr. Russell L. Cecil of New York City said in a discussion of the prognosis in chronic arthritis before the American Clinical and Climatological Association.

The prospects of recovery from chronic arthritis, sometimes popularly known as rheumatism, depend primarily on the type of arthritis from which the patient is suffering, Dr. Cecil stated.

In the case of osteo-arthritis, the characteristic degenerative changes are permanent and tend to progress slowly. The symptoms resulting from these changes, however, can usually be ameliorated or entirely cleared up by proper treatment.

"The disease never menaces life," Dr. Cecil stated, "but the danger of serious deformity and crippling always exists, especially in neglected cases."

It is in this type of arthritis that the cheerful, optimistic temperament was said to be a great asset. Young people respond to treatment better than elderly patients. Those who have an acute onset seem to have a better chance than those whose symptoms come on insidiously. Much depends on the joints involved, the knees, the hips and back offering the greatest difficulty.

Finally, the ability and the disposition of the patient to devote himself zealously to the regime and treatment prescribed by his physician is of the greatest importance in forecasting the chances of recovery.

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## GEOLOGY

**Burning Mountain To Be Extinguished**

**C**ARBON Mountain in Colorado, which has figured largely in the news during recent months because of the great landslips caused by the burning of buried coal seams, is to have its fires put out as part of the President's emergency conservation work. A 200-man camp is to be established in Wyoming, and an attack will be made on a large number of fires in coal deposits, some of which have been eating away at our natural resources for years.

It is estimated that 28 known coal fires in the West can be extinguished for \$500,000. On a royalty basis of fifteen cents a ton, these deposits are worth \$63,000,000 to the government.

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## PHYSICS

**Gamma Rays Considered Cause of Positrons**

**T**HE NEUTRON'S discoverer, Dr. James Chadwick of Cambridge, delivering the Bakerian lecture of the Royal Society in London, awarded a tentative decision against the neutron as the cause of formation of the positron, another newly discovered particle of matter, when radiations from radioactive beryllium pass through a lead plate.

The radiation from beryllium consists of neutrons and gamma rays. The neutron can be thought of as a corpuscle, but gamma rays are like light, X-rays and radio waves in being electromagnetic waves. Positrons or free positive electrons are produced by atom smashing when the mixed beryllium radiation is allowed to attack lead. The neutrons were accused at first, but now Dr. Chadwick believes that the gamma rays, not the neutrons, may be responsible.

Out of 300 electron tracks produced, 200 were made by the familiar negative electrons, while 70 were positive. Dr. Chadwick's work agrees generally with researches by Dr. Carl D. Anderson of California.

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# THE FIELDS

## BOTANY

### Temperate Zone Fruits To Be Raised in Tropics

A TEN-YEAR research program, aiming among other things at the adaptation of temperate-zone fruits and other plants to cultivation in the tropics, has been undertaken by the New York Botanical Garden. This was announced by Dr. G. Proctor Cooper, upon his arrival in Miami, Fla., on the schooner *White Cloud*, on which he and a group of his colleagues have just completed a seven-months' cruise.

A grant of land has been placed at the disposal of the New York Botanical Garden on Dominica, one of the Leeward Islands. Here for the next decade, botanists will conduct their researches each year from autumn to spring.

The expedition brought back five hundred valuable botanical specimens, which will be added to the collection in New York.

Members reported interesting experiences in various parts of the Caribbean. On the San Blas coast of Panama, where the famous "white Indians" are found, they traded old shirts for native spears. The inhabitants of Margarita Island, off Venezuela, they found loaded with ornaments made of pearls.

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## ARCHAEOLOGY

### Newly-Found Tablet Names Unknown Kings

THE HISTORY of ancient Assyria has been pushed back into the unknown and filled out by the discovery at Khorsabad, fifteen miles north of Nineveh, of a tablet containing the names of ninety-three early kings, it was revealed in an announcement by Dr. James H. Breasted, director of the Oriental Institute of the University of Chicago.

The tablet was unearthed by the Khorsabad division of the Iraq expedition of the Institute. Excavations which were made in the palace of Sargon the Second also resulted in the impor-

tant discovery of a temple of Nabu.

"But of still greater importance," Dr. Breasted declared, "is the royal list which is written in cuneiform on two sides of a large baked clay tablet and contains the names of ninety-three kings of ancient Assyria."

It was explained that the earliest names of Assyrian kings heretofore known, such as Ushpia and Kikia who ruled not long before 2000 B.C., have been completely detached from the known period of Assyrian history. The new Khorsabad list, however, furnishes eight new kings in unbroken succession preceding Ushpia and then continues down into historical times.

The entire list of ninety-three reigns covers a period of thirteen or fourteen hundred years, Dr. Breasted explained, from a century or two back of 2000 B.C. through the entire second millennium and ends in the eighth century down toward the reign of Sargon the Second, which began in 722 B.C. The list thus begins at possibly 2200 B.C. and ends around 730 B.C.

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## BIOLOGY

### M-Rays Affect Full-Grown As Well As Young Cells

FULL-GROWN cells no longer capable of dividing are susceptible to the influence of the mitogenetic rays, or "M-rays" given off by actively growing tissues, which have for some years been studied as a source of stimulation to the division process of young cells. So states Dr. H. Kowarzyk of the University of Krakow, Poland, who has tested the effect of this strange radiation on the activities of one class of white blood corpuscles, the leucocytes, that destroy bacteria and other foreign bodies.

Dr. Kowarzyk isolated a quantity of leucocytes from human, horse and rabbit blood, and exposed them to the action of M-rays from actively growing turnip tissues. Different samples of the irradiated leucocytes were given various species of bacteria to attack, including those of typhoid fever, blood poisoning, boils and the common colon bacillus. The leucocytes of human and rabbit blood suffered a depression of their ability to destroy the bacteria; those of the horse were stimulated.

Dr. Kowarzyk therefore regards the M-rays as effective upon mature, non-dividing cells, and not as specific stimulators for the process of cell-division.

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## PHILOSOPHY

### Bohr Classifies Truths and Opposites

SCIENCE may be defined as the field of activity where preconceptions can definitely be shown to have a limited applicability.

This statement is a typical example of the penetration and of the difficulty of remarks made by Prof. Niels Bohr, the Danish physicist, in a series of lectures before the California Institute of Technology, at Pasadena.

He classifies truths into trivialities, the opposites of which are obviously wrong, and wisdom, the opposites of which are sensible. Both are important. To renounce preconceptions always brings ample reward in the ever-widening field which we can thereby come to explore.

However, no matter how flexible we are, Prof. Bohr said, our experiences are always interpreted in terms of preconceived notions. The best we can do is to learn where these notions cease to help. In this way we make progress even though we inevitably return to our starting point.

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## GEOLOGY

### Brainlike Stalagmites Found in Maryland Cave

See Front Cover

STALAGMITE deposits shaped like human brains have been found on the floor of a newly discovered cave in Mount Etna, near Beaver Creek, Md., about sixty miles from Washington. James H. Benn of the Smithsonian Institution staff, who was detailed to make a geological investigation, brought one of them back with him for the U. S. National Museum collections.

The curious brain-like convolutions on the surface of the stone were formed by a double process, Mr. Benn explained. First the lime-charged drip of water from the roof formed rounded, smooth-surfaced deposits on the floor of the cave. Then the character of the water changed, and it lost its high lime content. After that it ceased to deposit lime on the stalagmitic masses, and instead began to dissolve away the lime already there, gradually wearing meandering channels that took on a striking resemblance to the furrows on the human cerebrum.

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