

SAFETY ENGINEERING

Toy Balloons With Helium Prevent Explosions

TOY balloons endanger lives of children if they are filled with hydrogen gas. A careless cigarette or match near hydrogen-filled balloons may send the youngsters to the hospital. Each hydrogen-filled balloon is a miniature Hindenburg.

Helium, the safe, non-inflammable gas, is used by many toy balloon sellers to inflate their colorful wares that children so often cry for.

In some cities there are ordinances requiring the toy balloons to be filled with helium. Elsewhere those who sell them use this safe gas because hotels and other public places insist upon it to guard against the starting of fires and the causing of panic due to explosions.

Helium is commercially available for this purpose from one concern with headquarters in Kentucky and with helium producing plants in Colorado and Kansas. Helium costs more than hydrogen but the added cost is small compared with the protection that it affords.

Science News Letter, May 22, 1937

AGRICULTURE

Farm Ownership Expected To Aid in Erosion Fight

FARM tenancy brings soil erosion as one of the many evils in its train. Operator ownership is a powerful preventive of this menacing cancer of the land.

These tenets constitute a prominent part of the credo of the President's Committee on Farm Tenancy, whose report was recently made public. The fact that less than half the farmers of the United States now own all the land they work lends extra weight to these considerations.

It is not to be expected that tenants or share-croppers, especially those who hold the land for too-short periods at too-high rents, will do much toward conserving the soil. On the contrary, it is to their interest (indeed often a matter of desperate self-preservation) to wring all they can out of the soil that is not theirs and put as little as possible back. Skimp on fertilizer, plow even steep slopes for cash crops: that is the bad economy often enforced upon the short-term tenant.

Without impropriety the parable of the Good Shepherd might be paraphrased into agricultural language:

"But he that is a tenant or a share-cropper, whose own the land is not,

seeth soil-ruin coming, and leaveth the land, and fleeth: and erosion taketh and ruineth the land.

"The tenant fleeth, because he is a tenant, and careth not for the land."

The good farmer, he who owns the land, may not go so far as to lay down his life for it, but he will at least take thought for his land, and bestow labor to stop gullies, and spare slopes to trees and grass. To the increase of such is the present effort of the Government directed.

Science News Letter, May 22, 1937

AERONAUTICS

Invention Might Prevent Disaster Like Hindenburg's

A NEW invention which eliminates the need of valving explosive hydrogen by an airship and which might well have prevented the tragic Hindenburg disaster has just been granted by the U. S. Patent Office, it is revealed in a search made by Science Service.

According to the patent of Wilhelm O. L. Fischer, of the Goodyear-Zeppelin Corporation of Akron, Ohio, the hydrogen, instead of being sent off into the air where it is a potential menace from explosion, is converted into harmless water that can be used for drinking, cooking and even as ballast for an airship.

In the airship proposed in Mr. Fischer's patent both hydrogen and helium gases are used to obtain buoyancy, with the hydrogen in relatively small bags completely surrounded by non-inflammable helium gas. The hydrogen bags are completely inflated as the airship is on the ground. The helium bags are only partially inflated to allow for the expansion of the gas which occurs as the airship rises.

The hydrogen gas expands too, on rising, but the excess is led off into a specially shielded burner where it is burned. In the burning it combines with oxygen and forms simple, pure water.

Beside the safety factor, other claims of the new patent are:

Less ballast needed, less fresh drinking water need be carried, and elimination of the necessity of condensing engine exhaust gases to compensate for the loss of fuel consumed on a flight. Mr. Fischer also outlines in his patent how the heat obtained from the burning hydrogen can create steam and be used to spin turbines and even the propellers of the airship. The Goodyear-Zeppelin Corporation now holds the patent through assignment.

Science News Letter, May 22, 1937

IN SCIENCE

PSYCHOLOGY

We Are All Either Yes-Men Or No-Men, Scientist Finds

LITTLE Mary wanted to go to the circus. Her mother forbade it on the ground that the father was unwilling. "Yes," protested the wise ten-year-old. "I know just how you asked him. You said, 'You don't want her to go, do you?'"

Mary knew her father was a yes-man. He would agree with anything that Mother proposed. She probably had also noticed that the mother, on the contrary, was a "no-man." It was her habit to disagree, on general principles, with everything suggested to her.

It has become a custom now to think of Congress as a body of yes-men, and of the Supreme Court as a smaller group of no-men. But now psychologists have heard the surprising news that those who criticize are probably in the same boat themselves. The world appears to be made up of just two kinds of people—yes-men and no-men, with a small sprinkling of habitual hedgers.

Acting as a bombshell to explode previous attempts to measure personality, this conclusion was reached by Dr. Irving Lorge, of Teachers College, Columbia University, as a result of his study of 84 persons on a WPA project. If a person answers yes to the question, "Are you slow in making decisions?" he would very likely give an affirmative answer also to the query, "Are you interested in mathematics?" And not because of any relation between the questions, but merely because he likes to say yes. Another person will persistently answer no.

Interesting differences between the yes-men and the no-men have already been discovered by Dr. Lorge, and he plans further exploration along this line. Self-confidence appears to be enjoyed by the yes-men and denied to the no-men.

No-men also seem to be lacking in "sociability," but the yes-men do not appear to have a parallel abundance of whatever that takes.

No-men, Dr. Lorge finds, are more intelligent.

Science News Letter, May 22, 1937

E FIELDS

ASTRONOMY

No Trace of Atmosphere On Planet Mercury

THE PLANET Mercury has no trace of atmosphere, observations of the recent transit of Mercury (the planet passing across the disk of the sun) made at Harvard's astronomical station at Bloemfontein, South Africa, indicate. A cable reporting fair observing conditions for the infrequently occurring transit was received by Dr. Harlow Shapley, director of Harvard College Observatory, from Dr. John S. Paraskevopoulos. There was no luminous arc around the planet, indicating no air.

Best astronomical evidence was that Mercury, like the moon, was completely without air, any that it may have had having escaped into space long, long ago. But the evidence for the lack on Mercury was less detailed than for the moon.

Aside from the lack of sufficient atmosphere, Mercury is too burning hot to support life. The surface temperature is from 570 to 660 degrees Fahrenheit, tin would melt; and the sun is $4\frac{1}{2}$ times larger than we see it from the earth.

Science News Letter, May 22, 1937

MEDICINE

Old Diseases Were Acute; New Ones Are Chronic

MODERN civilization may be streamlined for speed, but the chief diseases of the modern world follow a different pace. They tend to be more insidious and more chronic than the maladies that threatened health and life a few centuries ago.

Pointing to this difference between old and new diseases, Lord Horder, eminent English physician, recently remarked that the person who lived in the Elizabethan age "was very alive today and very dead tomorrow."

Smallpox, plague or cholera came in swift and violent epidemic outbursts. Recovery or death was also swift—a matter of days or weeks at most. The patient suffering from one of the so-called modern diseases, on the other

hand, lingers on for months and years.

Another difference between old and new diseases is that the old diseases were like attacks by an alien enemy, but now, Lord Horder says, "it looks as though our enemies have become the men of our own house."

For example, among the modern diseases are cancer, diabetes, other gland disorders, diseases of the heart and blood vessels including high and low blood pressure, and the milder forms of nervous and mental disorders such as neurasthenia. Some of these diseases are not strictly new. Cancer, high blood pressure, and even infantile paralysis, were known centuries ago. Their occurrence, however, was less frequent than it is today.

Something apparently has gone wrong with man's control over his own body, just as science was gaining control over the germ diseases. Lord Horder suggests that perhaps we are "discharging the battery at too high and charging it at too low an amperage."

The conquest of the old diseases has made life longer. Whether it is to be happier and healthier, or whether the extra years are to be wholly devoted to fighting the new, chronic diseases depends largely, Lord Horder suggests, on man himself.

Science News Letter, May 22, 1937

PALEONTOLOGY

Dinosaurs' Last Roundup To Be Explored

SCENE of the dinosaurs' last roundup, a series of hundred-million-year-old strata of Upper Cretaceous age discovered in Utah last summer by Government geologists, will be explored for remains of the fantastic giant reptiles this season by Charles W. Gilmore, Smithsonian Institution paleontologist.

It was in the Upper Cretaceous, Mr. Gilmore explained, that the dinosaurs, evolved into fantastic horned and armored forms, made their last stand against inevitable extinction. A hundred million years ago they ended the domination which they had exercised over the earth for almost that long, and made way for the coming of the Age of Mammals.

Practically all possible sites for good dinosaur digging have by now been discovered and staked out in scientific "claims," so that this newly reported area is something really noteworthy.

Science News Letter, May 22, 1937

ARCHAEOLOGY

Hymn Book Sheds Light On Medieval Music

NEW LIGHT on medieval music and art is shed by discovery of a great hymn book with 512 pages, used in the thirteenth century.

A Princeton University picture-taking expedition has found the extremely rare hymn book among Bibles and other literary treasures of Greek Orthodox monasteries on Mount Athos.

The great hymn book, known as a sticherarium, is written in Byzantine musical notation with Greek text, and is illustrated.

Importance of the book is that it traces Byzantine art and music to the famous eighth century theologian, John of Damascus. The manuscript book is a copy, very accurately made from earlier manuscript, according to Prof. Albert M. Friend, Jr., of Princeton's Department of Art and Archaeology.

"The pictures are plainly copies of early Palestinian originals," he reports, "of the period when John of Damascus was at the Monastery of St. Saba, near Jerusalem."

"Discovery of the manuscript with its pictures confirms the tradition that John of Damascus was really the person who codified Byzantine music into the form in which we have it today."

Since the illustrations were obviously included at the time the text was made, Prof. Friend points out, the manuscript reveals that John of Damascus encouraged Byzantine painting of religious figures, in the face of iconoclasts who opposed images. This theological battle, which John of Damascus is known to have waged with the iconoclasts, thus led him to preserve many ancient pictures which would otherwise be unknown.

One other great hymn book, combining pictures and music, has pointed to this significant role played by John of Damascus in Byzantine art and music. This book is in possession of the Monastery of St. Catherine on Mount Siani.

The Princeton expedition obtained 2,500 pictures, including many manuscripts which the Mt. Athos monasteries permitted photographed for the first time, and some manuscripts never before shown to scholars from outside.

The pictures will be used in the exhaustive index of Christian art on which Princeton research workers have been engaged for more than 20 years.

Science News Letter, May 22, 1937