

## Jewels Tell History

WOMEN of ancient Egypt decorated themselves with strings of colored glass beads cleverly shaped like fruits and flowers, and now, three thousand years later, scientists are collecting these little glass figs and melons and using them in the writing of plant history.

Fig-shaped glass beads, found in Italian tombs of the eighth and ninth centuries B. C., bear out the theory that edible figs were introduced into Europe just about that time, Dr. Gustavus A. Eisen stated in a report to the American Journal of Archaeology.

Dr. Eisen, who combines the study of biology and archaeology, states that fig beads have been found in Syria, Italy, and Egypt. All of them were made, presumably, in Egypt where glass work of this fine and beautiful type was done. The figs represented in glass are modeled from the Arabian or edible fig, he concludes. The Egyptian glass workers, who sought novelties, must have copied their designs from original fruit models. And so, it appears, the Arabian fig was transported from its native home through Syria and introduced to Egypt and the Mediterranean countries near the time that the fig beads first appeared.

The Egyptians seem always to have possessed a taste for beads representing fruits, flowers, domesticated animals, and insects, Dr. Eisen explains. The oldest of these beads were in the form of lotus flowers and melons. By the sixth century B. C. animated beads became the fashion rage in Egypt, and bead makers then introduced such styles as beads shaped like the heads of foreigners, and beads shaped like domestic animals.

Archaeology

Science News-Letter, June 21, 1930

## Smallpox

THERE is constant danger of a widespread outbreak of smallpox of virulent type in the United States because of the large number of susceptible persons, statisticians of the Metropolitan Life Insurance Co. state in a review of the situation during the last three years.

Until the number of susceptible persons is greatly reduced by general acceptance of vaccination, there will be no real security against smallpox, the report states.

More cases of smallpox were reported in 1929 from 44 states, the District of Columbia and eight Canadian provinces than in either 1928 or

1927. In Canada alone, there was much less smallpox than in either 1928 or 1927. Over 40,000 cases were reported during 1929 for the two countries, the 44 states and District of Columbia totalling over 38,000. However, for both countries combined, there were fewer deaths from the disease in 1929 than in the two preceding years.

Illinois reported more cases than any other state, but Louisiana, Maine, Georgia and Texas had very many fatal cases. El Paso, Texas, was an outstanding example of what happens when virulent smallpox attacks a community. Here in 1929 there were eleven deaths among 59 cases. If this ratio of deaths to cases had prevailed among the 38,063 persons who had smallpox in 45 American states last year, about 7,100 deaths from this loathsome disease would have resulted.

Medicine

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## Useful Weed

A VICTIM of disparagement for many years, dogbane or Indian hemp, a common weed, has at last been given a place in the society of plants of economic value.

Scientific research, according to the Missouri Botanical Garden Bulletin, has revealed that the weed, known scientifically as *Apocynum*, has rich rubber content.

"One of the most significant factors concerning the study of the latex of *Apocynum*," says the Bulletin, "is that the rubber content increases to a large extent with drought and infertility of the soil."

Botany

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## Teotihuacan

SIX new pyramids in a row have been unearthed along the "Pathway of the Dead," at the ancient Toltec city of Teotihuacan. Mexican archaeologists, working there under the direction of José Reygadas Vertiz, have made the first excavations at the site since 1924.

The new-found pyramids are small compared to the giant pyramids to the Sun and Moon for which Teotihuacan is famous, but they have many remarkable features. Stumps of the old temple walls which once surmounted the pyramids have been located, also broken pillars and several of the central altars and braziers. The walls mark the arrangement of rooms and show that several of the temples

# IN VARIOUS

had inner sanctuaries entered through maze-like passageways.

Each pyramid has its grand stairway in front looking toward the west, facing the avenue. The first two and last three pyramids are joined at the lower level. The last pyramid connects with the Temple of Tlaloc, so-called because numerous figures of the rain god, Tlaloc, have been found there.

Drainage canals of concrete covered with stone slabs have been found along the street, showing that the inhabitants of the city provided an outlet for the rain that would have flooded the avenue in the rainy season.

All outward signs indicate that when the other side of the street is excavated there will be found a symmetrical series of buildings on the two sides. The avenue is named the "Pathway of the Dead" because the rounded mounds along either side of the great street were once believed to be tombs.

Teotihuacan is of unknown age and history. The Aztecs who met the Spanish conquerors in the sixteenth century could tell nothing of its origin.

Archaeology

Science News-Letter, June 21, 1930

## Gorilla Grows Slowly

A YOUNG male gorilla grows more slowly than a boy of the same age. So reports Dr. C. V. Noback of the New York Entomological Society, who has made a detailed study of a youthful gorilla received at the New York zoo some time ago. The rate of growth during the first three years of life was measured in terms of adult weight. Possibly correlated with this slower growth is the fact that the bones and teeth of the gorilla mature more rapidly than those of a human child. The animal reported in Dr. Noback's study had its full set of milk teeth at approximately eighteen months, and began to acquire permanent teeth at two and one-half years.

Zoology

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## Penetrating Heat

A YOUNG research fellow at the California Institute of Technology has been conducting experiments on the penetration of the flesh by radiation. He is Hawley Cart-

## SCIENCE FIELDS

wright and he has discovered that only a small range of the rays, those with wavelengths lying between 7000 and 14,000 Angstrom units (one ten-millionth of a millimeter) will shine through animal tissue. The visible rays, the ultraviolet, and some of the infra-red become lost in the flesh and fail to shine through. The significance of this is that these rays can be used to heat the body internally. Hot water bottles and electric pads are localized heaters compared to these infra-red rays that penetrate the flesh and heat it internally.

Mr. Cartwright placed a high temperature bulb inside his mouth and with a spectrograph he tested the colors, the wavelengths, that penetrated his cheeks. His tests were simple and conclusive.

A concentrated beam of light was made to shine through his cheek into a spectrometer. With a special vacuum thermo-couple, he then measured the energy of the various colors, visible and invisible. A greater part of the infra-red rays penetrated through his cheeks than all other radiation. Infra-red rays are not chemical in their effect but they are merely heat rays that are now found to shine into the flesh. The experiments may lead to new research and possibly to new or perfected therapeutic lamps.

*Physics*

*Science News-Letter, June 21, 1930*

### *Metal Fatigue*

THE "unknown" cause of the few airplane crashes in which motors fail for no apparent reason is often metal fatigue at hidden imperfections, frequently the inevitable result of parts vibrating in unison and thus multiplying to the breaking point the strains they bear.

A device with magnetic eyes which penetrates the interior of steel parts now finds these minute defects where fatigue occurs, but the vibration danger still exists.

"It is what broke three crankshafts during a single flight of the Graf Zeppelin while the fourth did not quite reach the point of failure," said Roland Chilton, consulting engineer, of Patterson, N. J., in a recent report to the American Society of Automotive Engineers. "The same thing happens when glass bowls are shattered by

striking a synchronous piano note," Mr. Chilton explained.

The usual remedy is to "beef up" the crank shaft, not to make it stronger, but to bring its period of vibration above the operating speed of the engine, it was pointed out.

Another cause of failure at slight interior defects is the continuous vibrating of so-called rigid parts, the engineer said. The movement is as much as two-thousandths of an inch in a distance of one inch. Thus the fixed parts of the engine act very much like springs.

But the magnetic induction analyzer is coming into greater use to find the hidden weak spots which would pass visual and stationary testing and is overcoming difficulties of both kinds of vibration, according to Mr. Chilton.

"This machine detects hair cracks, inclusions, segregation, and other defects in bar stock, which is fed rapidly through induction coils, and incidentally excites in anyone who watches it a decided preference for engines built from stock so selected,"

*Engineering*

*Science News-Letter, June 21, 1930*

### *Flood Control*

TOWARD the end of the 71st Congress, the Mississippi flood control problem will be nearer a satisfactory solution than ever before, recent hearings of the House Flood Control Committee indicate.

Complaints from owners of land in the artificial spillways being constructed under the Jadwin plan are expected to be satisfied by the passage of the Wilson bill under which compensation will be paid for water rights over these lands.

The exhaustive study of the river and its tributaries ordered by President Hoover, which includes surveys for possible reservoirs, spillways, levees, water power and navigation, will be farther under way.

Even now information brought out before the Committee points to a combination of the Jadwin plan of artificial spillways and the reservoir system provided for in the Sears bill as the final means of protecting the lowlands.

Levees and spillways would be built on the lower river where they are needed most. At the same time the water entering the Mississippi would be controlled by reservoirs on the headwaters of the tributaries. Natural lake sites would be picked for the reservoirs so their cost will be low.

*Hydraulic Engineering*

*Science News-Letter, June 21, 1930*

### *Deaf Men's Minds*

THE individual who loses his hearing entirely, or even partially, is in danger of falling into one of two unhappy states. Either he may become sadly depressed, or else he may become suspicious.

Which way the deafened person is most likely to fall depends on his own personality, Dr. Ruth Brickner, of New York, told the Federation of Organizations for the Hard of Hearing.

The person who becomes suspicious is the type known to psychiatrists as a narcissistic person, because of his strong tendency to self-love. Such a man has always been unable to accept criticism, Dr. Brickner explained. He could not be wrong, and yet frequently complains of injuries and slights. He cannot accept, or even believe, that he has become the victim of a serious disorder, and so when he gets into difficulties through his defective hearing he is quick to accuse the world of persecution and ridicule.

The man who becomes depressed is the type who has always gone through life feeling dissatisfied with his achievements and highly critical of himself. He has been unable to develop what Dr. Adolf Meyer so aptly calls "resting points of satisfaction," Dr. Brickner showed. Such a man may rage at his deafness which restricts his freedom, but his rage takes the form of self-hatred.

Both types, if the condition becomes acute, shut themselves away from other people, the first because he suspects people of being unfair to him, and the second because he dislikes to trouble others with his conversational handicap. Extreme personality types and extreme reactions to deafness are not common, but each individual needs to recognize the tendencies and where they may lead, it was shown.

Study of lip reading was recommended by Dr. Brickner as the first prerequisite to overcome isolation in deafness. Human beings happen to be social beings, she stressed. Some deafened persons achieve success in social contact with other deafened persons, and in familiar environment, but become panic-stricken when they have to talk with hearing people. Others attain the greater victory of mingling securely with the deafened and with hearing people alike.

*Psychology*

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