

## PHYSIOLOGY

**Ear Bones Not Needed  
In Certain Circumstances**

**C**AN our ears work all right without the complicated apparatus of little bones in the middle ear that our school-books taught us were an indispensable part of the hearing apparatus?

Experiments by Dr. Stacy R. Guild, of the Johns Hopkins University, reported to the American Association of Anatomists, indicate that under certain circumstances at least these "ossicles"—hammer, anvil, and stirrup—are unnecessary for the transmission of sound.

Dr. Guild, by very delicate surgical methods, put out of commission one of the little bones in the ear of an etherized cat. Then he inserted an electrical contact into the inner ear, hooked up with a six-tube amplifier.

Sounds were conducted into the bones of the cat's head through a piece of wood held against the skin. They came out through the amplifier undistorted in the lower tones, and but little distorted in the higher tones, even though the supposedly necessary train of little ear bones had been interrupted.

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## PUBLIC HEALTH

**Health Service to Help  
Prevent Industrial Diseases**

**P**LANS for preventing future Gauley Bridge tragedies were discussed at the Conference of State and Territorial Health Officers with the U. S. Public Health Service in Washington, D. C.

Using funds provided by the Social Security Act, the federal health service is ready to help state health departments establish units of industrial hygiene to study and find means to prevent the industrial hazards in each state.

Most important industrial diseases in this country are the dust diseases. Among these are silicosis, blamed for the deaths of hundreds of workers at Gauley Bridge, W. Va., and the similar lung diseases, anthracosilicosis of coal miners and asbestosis of the asbestos industry. Skin diseases make up another important group of industrial or occupational diseases. While these do not threaten the worker's life, they are the cause of much lost time.

Until this year only four states, Connecticut, Ohio, Mississippi and Maryland, had industrial hygiene divisions in the state health departments. These four states spent together about \$40,000

annually on the prevention of industrial diseases. New York State and Massachusetts handle the problem of industrial disease through their departments of labor.

After July 1, industrial hygiene units will be started in eight more state departments of health. These units will be financed partly by the U. S. Public Health Service and partly by the individual states. Instead of \$40,000, some \$300,000 will then be spent annually on industrial disease prevention. This amounts to about 15 mills per worker for those states, and is not large, it was pointed out, when compared with the half million dollars paid out in compensation for occupational diseases by New York State alone during 1934.

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## ANTHROPOLOGY

**Eye Better Than Microscope  
In Studying Human Hair**

**H**ERE is a scientific paradox. The eye is more reliable than the microscope, in most cases, in scientific study of the hair of human races.

This conclusion was reported to the central section of the American Anthropological Association by Miss Mildred Kneberg, of the University of Chicago.

Early studies of human hair under microscopes had apparently settled the traits of hair in neat order. Wavy or kinky hair was declared to look flat-shaped when a tiny cross-section was examined under a powerful lens. The straightest of hair, found in Mongolians, was the roundest. And the rounder the hair shaft the lighter it was in weight.

Miss Kneberg explained that with improved methods of microscope study many of the tiny differences have turned out to be variations, which can be observed on a single head and often on a single hair.

"The shape of the cross-section of a hair," she stated, "will not tell whether it is straight or curly. The weight of a given length of hair depends on the size of the hair shafts and not on the pigment or air contained in the hair."

Stressing importance of human hair as a criterion in classifying men into races, Miss Kneberg urged that the color, form, and size of hair and the age of the individual be statistically treated together, to produce more accurate records of the hair of different racial groups. She also urged that genealogical information about hair be obtained, to shed light on inheritance of hair traits and effects of race-crossing.

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**IN SCIENCE**

## PHYSIOLOGY

**New Role For Pituitary—  
It Controls the Spleen**

**D**ISCOVERY of a new activity of the pituitary gland and possibly of a new pituitary hormone was reported by Dr. David Perla of New York City to the American Association of Pathologists and Bacteriologists.

The new hormone from the powerful but tiny gland in the head stimulates the spleen. This important organ is endowed with enormous recuperative powers, so that when a part of it must be removed because of disease, or is damaged, the organ regenerates itself, forming new spleen tissue to replace that lost. In animals the spleen cannot regenerate when the pituitary gland has been removed, Dr. Perla found. Doses of pituitary gland extract, however, renewed the regenerative power of the spleen in these animals whose own pituitary glands had been removed. These and similar studies indicate that the pituitary, besides influencing growth, sexual development and other body activities, also has control over the spleen.

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## ASTRONOMY

**Mirror Starts Long Siege  
Of Having Its Face Rouged**

**T**HE great 200-inch mirror disk is now having its face rouged after a successful but uneventful special train trip across the continent from its furnace-birthplace in Corning, N. Y.

Mounted under the special grinding machine which has been practicing upon lesser glass disks for many months, the great mirror will be subjected to a long siege of exacting optical work. First the gentle but persistent grinding will transform it into a perfect spherical surface. Later it will be given its final and more complex shape that will catch and focus on Mt. Palomar light from the depths of the universe.

Rouge, not unlike the sort used upon feminine faces, is the very fine abrasive used in the finishing process. The careful shaping of the mirror will take years.

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# E FIELDS

ASTRONOMY

## Pieces of Exploding Star Made Separate Spectra

**A**LTHOUGH it has faded, Nova Herculis, the star in the constellation of Hercules that was seen to flash out from previous obscurity at the end of 1934, is still engaging the attention of astronomers.

Several months after discovery, it was observed to break into two parts, and each part seems to have produced its own spectrum, in the series of dark lines seen when its light was analyzed through the spectroscope. This is the suggestion of Dr. W. W. Morgan, of the Yerkes Observatory. (*Astrophysical Journal*.) In January, 1935, two sets of these lines were observed, but at the time they were difficult to explain.

When the star broke into two, one component seems to have been traveling in our direction at a speed of 530 miles per second, while the other was receding at 675 miles per second. This is the reason that the lines were seen in duplicate. The lines from a body traveling earthwards are shifted to the blue end of the spectrum, while those from a star speeding away are moved to the red. Had both pieces been traveling at right angles to the direction of the earth, their spectra would have merged.

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PHYSIOLOGY

## Fish with Parts of Brain Have Abnormal Breeding

**S**EX-LIFE is not commonly supposed to require much in the way of brains, but Dr. G. K. Noble of the American Museum of Natural History in New York City has found out that it does, at least among fishes. At the meeting of the American Association of Anatomists at Durham, N. C., he reported his researches bearing on the subject.

Dr. Noble experimented on cichlid fishes, a large class of small-sized tropical fishes, some of which are kept as pets. Surgical operations, even radical ones removing a large part of the brain, never seem to bother a fish. It goes on

living normally, except for changes in behavior brought about by the absence of parts of the governing mechanism.

Dr. Noble's fishes, for example, got along all right with a considerable part of their forebrains gone, except in the somewhat complicated business of egg production and rearing the young. If the cut went too far back in the brain, the eggs could not even be laid and fertilized. Bits of pituitary gland from frogs implanted in the heads of the operated fishes enabled the females to produce eggs, but did not restore normal mating behavior.

Another curious effect of the brain-removing operations was noted in the social behavior of the fish. Normally fish of this class swim in schools, wheeling and maneuvering in the water like birds in the air. But the operated fish could no longer follow the movements of their school, and would swim off at a tangent when their companions made a turn.

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MEDICINE

## Pneumonia After Operations Studied in Animal Tests

**F**IRST experimental production of a lung condition and subsequent pneumonia, seen in human patients following extensive surgical operations and other conditions, was reported to the American Association of Pathologists and Bacteriologists by Drs. Virgil H. Moon and David R. Morgan of Philadelphia.

Such studies of how the serious problem of post-operative pneumonia is caused may enable physicians to prevent it.

The condition is associated with failing blood circulation and may develop in patients following superficial burns of the skin, in toxic conditions linked with childbirth, jaundice or diabetes, and following overdoses of sleeping powders and other drugs. In these conditions the lungs become water-logged, resembling a sponge from which quantities of fluid can be squeezed. Lungs in this state are easily infected and when the condition known as edema arises, pneumonia frequently follows and causes death.

The Philadelphia scientists were able to produce the same condition in animals by various procedures such as superficial burns, prolonged treatment with sleeping powders and intoxication by bile injections. Four or five days later the animals regularly developed a form of pneumonia seen in human patients under similar conditions.

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PSYCHOLOGY-PHYSIOLOGY

## Parental Instinct Not Due to Glands Alone

**P**ARENTAL instinct, in the mouse at least, is not a matter of the pituitary gland and its hormones alone, it appears from studies reported by Drs. C. P. Leblond and W. O. Nelson of Yale University School of Medicine to the American Association of Anatomists.

Possibility of a nervous mechanism being involved is suggested by the Yale investigators. As they see it, parental instinct may be first awakened by the pituitary gland hormone, prolactin, which controls lactation. This phenomenon was reported by Dr. Oscar Riddle and associates of the Carnegie Institution of Washington's laboratory at Cold Spring Harbor, N. Y. The instinct to care for one's young, however, may be independent of lactation. Once aroused, it may continue without the influence of the hormone, possibly coming under nervous control at this stage.

Experiments with mice provided the basis for this theory. In these animals, the parental instinct appears to a slight degree at puberty, the Yale scientists reported, but is markedly increased in both sexes when the young mice are born. When the pituitary gland is removed in females that are nursing their young, lactation stops, but the mice continue to take good care of the young in other ways.

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LANGUAGE

## Candidates Get Their Name From Old Roman Custom

**M**ODERN politicians inherit the name candidate from the old Romans. But most office seekers never heard of the costume that fits the title.

Office seekers were called *candidati*, meaning men in white, by the ancient Romans, says Dr. H. J. Leon of the University of Texas Department of Classical Languages. The nickname fitted in those days, because office seekers advertised themselves, wherever they went, by wearing wool togas made super-white by rubbing in fuller's chalk.

"This was undoubtedly a convenient and happy practice," comments Dr. Leon, "but there is no evidence that it did away with baby kissing."

A news report that the Romans wore white linen togas was discounted by Dr. Leon, who stated that Roman togas were always of wool.

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