

## PHYSIOLOGY

**Dog Breeding Damages Behavior Governing Glands**

**D**OG fanciers, striving for perfection of established standards in body and head shapes in the various kinds of dogs, pay for them in part by making poor mothers out of the females they breed, Prof. Charles R. Stockard of Cornell University indicated in a report to the American Philosophical Society.

Glands are responsible for the abnormal behavior, Prof. Stockard declared. In breeding for the artificially established "points" that win pure-bred dogs their bench prizes, the fanciers also unintentionally establish internal abnormalities, including some that affect the behavior, especially maternal behavior.

Bulldog females, for example, have abnormal eating tendencies immediately after birth, that in some cases result in the devouring of their own new-born puppies. Big dogs with abnormally large heads, like St. Bernards and mastiffs, lack the reflexes that other bitches have, of pushing their puppies out of the way as they lie down, so that they often crush them to death. Still other breeds lose their attachment for their owners and become runaways and wanderers before their puppies are born.

*Science News Letter, May 7, 1938*

## ENGINEERING

**British Fingerprint Roads in Skid Study**

**U**SING some of the fingerprint tricks of Scotland Yard, the Department of Scientific and Industrial Research of Great Britain is now studying slippery roads by taking fingerprints of motor car tires.

As reported in *Industrial and Engineering Chemistry*, published by the American Chemical Society in Washington, D. C., the road under study is coated with an ink and a perfectly smooth tire rolled over it. The tire is then transferred to white paper and an exact record of the texture of road surface, over which the tire has rolled, is obtained.

Slippery roads have been found to be those in which there is a high ratio between the total area of contact between tire and road and the number of isolated points of contact. The latter, isolated areas, must be surrounded by channels deep enough so that the water on the road can escape as the tire passes over.

If the channels are too small the individual areas merge and the surface behaves like a smooth one. The requirements for non-skid tires are similar.

On very slippery roads studies show that the tire makes contact with the pavement over nearly all its surface of contact while the number of individual contacts is small. Good roads, low in skid values, were found to be those yielding prints that disclosed a lesser area of total contact and many more individual points of contact. A "sandpaper" surfaced road, with its many tiny and almost imperceptible points of irregularity, is typical of a highway low in slipping characteristics. Not only are different road surfaces being studied, but tests are also underway to study the skidding characteristics of the same roads at different times of the year.

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## PSYCHIATRY

**Psychiatric Institute Starts "Fatigue Service"**

**A** "FATIGUE service" for industrial employees has been established at the Neuro-Psychiatric Institute of the Hartford Retreat, Dr. C. Charles Burlingame, psychiatrist-in-chief of the institute, announced in his annual report.

The object of the newly organized service is to increase the efficiency and happiness of the individual worker by helping to solve emotional or personality problems which may threaten not only his efficiency but his mental health.

"These emotional difficulties are quite as incapacitating to the employee as a physical illness," Dr. Burlingame said, "and often more annoying to the industrial organization.

"Chronic fatigue, irritability, inability to get along with fellow-workers, feelings of persecution, a chronic state of 'being agin the government,' crying for no good reason at all on the job or at home may be outward evidence of a condition which may so affect the efficiency of the worker that much of his value to himself and to his employer is destroyed.

"More progressive employers are beginning to realize the dollars and cents value of finding an answer. This interest is not of the welfare variety which implies a patronizing supplying of uplift facilities, recreational benefits, etc., but rather, an intelligent effort to get at the root of the individual mental disorders, just as industry is going at the problem of the employees' physical health."

*Science News Letter, May 7, 1938*

**IN SCIENCE**

## PHYSIOLOGY

**Brain's Heat Center Shown By Electrical Warming**

**T**HE BRAIN has a definite "heat center" that responds to heating by speeding up breathing, starting perspiration, and initiating other physiological means for cooling off the body. Its existence and location have been demonstrated by Dr. H. W. Magoun of Northwestern University Medical School.

In his experiments, Dr. Magoun applied electrical warmth to various parts of the brain of an anesthetized cat. When respiration speeded up, and the toe-pads showed signs of sweating, that was taken as an indication of stimulation of the heat center.

This region that responds to rise in temperature lies on the underside of the front part of the brain, and partly on the underside of the midbrain. Normally, Dr. Magoun supposes, this heat center receives its stimulus from increased temperature of the blood. Heated environment warms the body, which in turn warms the blood, and when circulation carries it to the brain its increased temperature triggers the cooling-off reactions of sweating and faster breathing.

*Science News Letter, May 7, 1938*

## GEOLOGY

**Glaciers of Rock Flow Slowly Down Mountain Side**

See Front Cover

**C**REEPING sluggishly but almost irresistibly down the slopes of Snowmass Mountains, in the West Elk Mountains of Colorado, from the cirques once occupied by ordinary ice glaciers, these sheets of rock, here photographed from the air for the United States Geological Survey, gradually obliterate the ordinary glacial features of the mountain flanks, replacing them with barren flats of loose and broken rock. Rock glaciers were first noted in Alaska, and have since been found in many parts of the world. The longest one shown in this picture, the central rock glacier, is about two miles long.

*Science News Letter, May 7, 1938*

# E FIELDS

## ANTHROPOLOGY

### Indian Skulls Show Great Range in Brain Size

SOME Indians that lived in recent times had brains smaller than that of ancient *Pithecanthropus erectus*, the ape-man of Java; other "modern" Indians had brains bigger than those of present-day geniuses among white men.

Skulls measured to show these striking contrasts were shown to the meeting of the National Academy of Sciences by Dr. Ales Hrdlicka of the U. S. National Museum. The smallest skulls were those of Peruvian Indians, the biggest two were from Alaska and near Washington, D. C., respectively.

The Peruvian skulls had capacities as low as 910 cubic centimeters; compared with this is the *Pithecanthropus* cranium's estimated 1,000 cubic centimeters. The biggest skull (the Potomac Indian) has a volume of 2,100 cubic centimeters; most of the noted scientists who looked at it have brains only about three-quarters that large.

*Science News Letter, May 7, 1938*

## AERONAUTICS

### Commander Rosendahl Pleads For U. S. Airships

CALLING for construction of four Zeppelin type airships, two for commercial and two for naval purposes, Commander Charles E. Rosendahl, United States Navy, outlines a program for revival of the airship in the United States in a new book, "What About the Airship?"

New types of ships and one rigid and several non-rigid ships in addition should be built and tried by the U. S. Navy, he urges. The "Los Angeles," lighter-than-air craft built in Germany for the United States following the World War, should be recommissioned, he declares, if found suitable after careful examination.

Comdr. Rosendahl, who once skippered the *Los Angeles*, is noted as America's outstanding authority on airships. He is commander of the Lakehurst Naval Air Station, most important airship base in the United States, and

was on duty at the time of the *Hindenburg* disaster a year ago.

"The greatest stumbling block in the path of the airship is lack of understanding," he asserts in his defense of the airship. "America won't give up the airship, I am sure. But when are we going to do something serious about it?" he asks.

Finding the Zeppelin type of ship of potentially great use as a scout and as a high-speed plane carrier for national defense, he also believes it commercially justified for long distance non-stop flights at intermediate speeds. He quotes operation figures recorded by the ill-fated *Hindenburg* in its first year of operation as proof that a transoceanic airship line operating on a frequent schedule can be made to pay. The *Hindenburg's* passenger and freight revenue covered 75 per cent. of the cost of operating, including terminal expenses and other overhead that would not be materially increased by more airships.

*Science News Letter, May 7, 1938*

## ENGINEERING

### Goodyear Zeppelin Testing Aluminum Airship Girders

ENGINEERS of the Goodyear Zeppelin Corporation, builders of the Akron and Macon and probable builders of the proposed replacement for the Los Angeles, have been conducting tests to determine the resistance to fatigue of various types of aluminum alloy airship girders, states a report prepared by them for the National Advisory Committee on Aeronautics, government aeronautical research organization.

Alternate compressions and tensions at a rapid rate of change were applied to test girders by means of an ingenious resonance fatigue machine. Failures were found to occur most frequently at crescent-shaped holes, while solid girders were the most resistant to fatigue.

The tests have been under way for at least several months, certainly before it became known that construction of an airship was contemplated in the naval expansion bill. The Goodyear Zeppelin Corporation has been carrying on lighter-than-air craft experiments during past years despite the relative lack of interest in the United States in airships.

Such research as the fatigue tests reported are especially necessary in the airship field, it is pointed out, because too few ships are built to enable satisfactory data to be gathered from past experience.

*Science News Letter, May 7, 1938*

## PHYSIOLOGY

### Thyroid and Pituitary Blamed for Mongolism

MONGOLOID deficiency was blamed on the thyroid gland by two different investigators who reported their separate research at the meeting of the American Association on Mental Deficiency in Richmond, Va. The term mongoloid is used to describe this condition because the mental defect, present at birth, is accompanied by a mongoloid appearance.

Overactivity of the thyroid gland of the mother may account in part for the birth of a child with this mental defect, Dr. C. Roger Myers of the University of Toronto suggested. His theory is based on comparison of all records on 215 non-mongoloid mental defectives with 215 mongoloid mental defectives.

Both thyroid and pituitary glands—the one the large U-shaped gland in the neck and the other the important gland at the base of the brain—were blamed for the condition by Dr. Clemens E. Benda of Wrentham, Mass., State School and Harvard Medical School.

Mental growth among inmates of an institution for mental defectives is greatest before the age of 14, but it may occur after 14 years and to a lesser extent after 16 years, Edith Wladkowsky, psychologist at the Caswell Training School, Kinston, N. C., found on retesting three groups of individuals after an interval of from two to six years.

*Science News Letter, May 7, 1938*

## MEDICINE

### Spinal Anesthetic Treatment For "Super" Blood Pressure

A LIFE-SAVING emergency treatment for patients with "super" high blood pressure who are in danger of fatal brain hemorrhage was reported by Dr. Albert S. Hyman of New York City to the American College of Physicians.

The treatment consists of removing a small amount of fluid from the spinal canal and injecting into this canal an anesthetic solution. This treatment reduces the high blood pressure and carries the patient through the emergency period. Dr. Hyman stressed that the treatment is only an emergency method of giving temporary relief, but added that in some cases the blood pressure had remained at the lowered level for relatively long periods of time following the treatment.

*Science News Letter, May 7, 1938*