

ZOOLOGY

"Cold-Blooded" Animals Grow Faster in Cold

► "COLD-BLOODED" animals, such as sea snails, may not be so cold-blooded after all. Some of them grow faster in cold water than in warm water.

Dr. Paul Dehnel, University of California at Los Angeles zoologist, points out that coldbloods, in the zoological sense, are those animals that cannot adapt readily to temperature changes. A lowering of temperature limits body activities considerably.

The U.C.L.A. zoologist has found that at least one coldblood, the sea snail, may even step up his body activities because of the cold. This was suggested when he observed that sea snails grow faster and achieve adulthood sooner in Alaskan waters than they do in southern California waters.

There are certain times of the year when Alaskan waters are so cold that body activities of all types are curtailed and growth suspended. So the sea snail apparently speeds up activity during the "growing season," and thus reaches adulthood far ahead of his southern brethren.

The adult Alaskan sea snail does not get any larger than the southern California variety. However, other types of marine animals do. This points to the conclusion that the "longitude" of some fish is a function of the latitude.

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AERONAUTICS

Officer Survives Sled "Bailout" Test

► AN AIR Force officer has survived a test in which he was rocketed at 421 miles an hour in a railroad-like sled, and brought to a stop so suddenly that his 180-pound body would have registered 3,960 pounds on spring scales.

Lieut. Col. John Paul Stapp, chief of the aero medical field laboratory at the Holloman Air Development Center in New Mexico, experienced 22 g's during the test. This is 22 times the normal pull of gravity on the body.

Col. Stapp has conducted the human deceleration program several years for the Air Force. The current series of tests is aimed at finding out what would happen to a pilot if he were forced to bail out at supersonic speeds.

This first test was made in a specially designed sled which roared down extra-heavy railroad track. It was pushed by a second sled powered by six rockets, each capable of generating 4,500 pounds of thrust.

It was stopped suddenly by a scoop mechanism that dipped into a trough between the rails, channeling water into the sled and spewing it out in a powerful jet-like stream.

Future tests will check the effects of tumbling, wind blast and deceleration on volunteers. But the tumbling tests will not be made until full information on maxi-

mum speed runs has been obtained. The tumbling tests will be conducted in a special chair attachment for the sled which rotates the subject head over heels 180 times a minute.

The sled can be powered by a maximum of 12 rockets which are capable of carrying a 200-pound man 800 miles an hour—faster than the speed of sound. At the 4,092-foot elevation of the Holloman Air Development Center, ground speeds of 800 miles an hour are equal to 1,800 miles an hour at a flying height of 40,000 feet.

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ARCHAEOLOGY

Survey Started On Catalina Island

► THE FIRST systematic archaeological survey of Catalina, California's famous island playground, is now being made by Dr. Clement Meighan, E. V. Winans and J. C. Hurst, archaeologists at the University of California at Los Angeles.

Although the island resort is known to contain an abundance of Indian relics, no one has attempted to find out about the Indians who inhabited the island before the first Spanish "tourists" came in 1542.

Among the initial discoveries is an ancient soapstone quarry from which the Indians carved stone dishes, tools and ornaments. Also found were the remains of what appeared to be a primitive dwelling. The dwelling site is located on a bluff which affords a scenic view of Catalina channel with the Palos Verdes Hills and San Gabriel Mountains as a backdrop.

A hollow rock in which the Indians had carved out a chimney was found below the quarry. Although it is similar to a backyard incinerator in appearance, the archaeologists surmised it might have been used to bake food.

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VETERINARY MEDICINE

Bossy Gets Own De-Lousing Gadget

► A DE-LOUSING gadget that cattle can operate themselves, thus saving the farmer and rancher much time in spraying and dipping, has been devised by entomologists of the U. S. Department of Agriculture.

The gadget consists of burlap-wrapped wire stretched from the top of a five-foot post and anchored to the ground nine feet from the base of the post. The burlap is treated with about a gallon of five percent chlordane oil solution.

Tests showed the device both effective and safe, since it proved impossible for cattle to overdose themselves by rubbing against it. The government scientists believe it should be especially useful for northern cattlemen who live where cold damp winters make spraying or dipping the animals undesirable.

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IN SCIEN

VETERINARY MEDICINE

Modern Cow Highstrung And Needs Special Care

► THE IDEA that a cow is a placid animal is all wrong, it appears from a report from the American Veterinary Medical Association in Chicago.

"The modern dairy cow is such a high strung milk producing machine that she needs special care to remain in high production," association officials declare.

Otherwise she may get ketosis, a "stress" disease caused by an upset of the metabolic balance of high producing cows. The disease usually develops five to 80 days after calving.

Several factors may act as the "trigger" to touch off ketosis cases. Improper feeding and management, lack of exercise, feed deficiencies, fatigue, exposure, infectious diseases and digestive upsets, all may lead to ketosis.

Cows affected with ketosis show a slow drop in milk production, rapid loss of weight, loss of appetite and nervous symptoms. Treatment is aimed at restoring the hormonal and metabolic balance of the cow's system. New hormone drugs have been used successfully to speed recovery of stricken animals.

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INVENTION

Patent Gasoline Engine With Hour-Glass Shape

► A GERMAN automotive engineer has patented a new gasoline engine designed to eliminate knocking by improved combustion and reduce repair bills by easier valve grinding.

It has a roughly hour-glass shape and was invented by Rudolf Kosche of Stuttgart.

A small circular passage connects the hemispherical combustion chamber with the cylinder space below it. In cross-section, the design looks as if the cylinder had been constricted between the top of the piston and the sparkplug.

The two valves are set in the sides of the combustion chamber with concave heads matching the spherical shape. When the top of the engine is removed, the combustion chamber and valves are immediately accessible for repair.

Mr. Kosche claims that this radical design greatly improves the firing of gasoline and the exhausting of spent gases. Knocking in automobile engines is usually caused by delayed or incomplete combustion of the fuel.

The engine patent was assigned to the Daimler-Benz firm in Stuttgart and received patent No. 2,672, 135.

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CE FIELDS

MEDICINE

New Rash and Fever Disease of Children

► DISCOVERY OF a new rash and fever disease that is "catching" and afflicts children is announced in the *Journal of the American Medical Association* (June 5).

Doctors in Massachusetts reported seeing 2,450 cases within one three-month period. Most of the cases occurred in and around Boston and most were in children 10 years or younger. The few grownups who got the disease had "shaking chills" as well as fever.

Fortunately the disease is not serious and patients recover in a few days. It is like German measles except swollen glands in the neck, typical of German measles, are not often seen in this new disease. It comes at a different time of year from German measles, too. It has not yet been given any name.

A virus believed to be the cause has been isolated.

The new disease was discovered by doctors in the Boston area in the late summer of 1951. No cases were reported in 1952, but cases appeared again in 1953. The disease may have occurred in epidemics elsewhere but been mistaken for German measles.

Report of the 1951 outbreak and of the isolation of the virus are given by Drs. Roy F. Feenster and Ilse J. Gorbach of the Children's Medical Center and the Massachusetts Department of Public Health, Boston, and Dr. Franklin A. Neva, now at the University of Pittsburgh School of Medicine, Pittsburgh.

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MEDICINE

Hormones Might Stop Ruptured Spinal Disc

► RUPTURED DISCS, cause of severe, often disabling backache and sciatic pain in the leg, might be prevented by hormone treatment, Dr. Barnes Woodhall, professor of neurosurgery at Duke University Medical School, Durham, N. C., declared at the meeting of the American Orthopedic Association in Bretton Woods, N. H.

Abnormal chemical changes probably destroy the disc before it ruptures, Dr. Woodhall stated. The hormone treatment might stop this degenerative process before the rupture actually occurs, he suggested. His theory is based on study of 1,000 cases picked at random from more than 2,200 operations on ruptured discs at Duke during the past 17 years.

A disc is made up of a dense tissue framework imbedded in a mass of specialized

tissue that contains sugars (mucopolysaccharides), water and salts.

As a person grows old, Dr. Woodhall explained, the salts gradually decrease, and there is a corresponding decrease in water content.

Admitting many unsolved problems in the chemistry of the sugars, he said, clinical studies recorded during aging suggest that changes in these components of the human disc may be present in the interspace tissue preceding acute disc rupture.

In discussing the cases, the Duke neurosurgeon said that more than 95% of the ruptured discs occurred at one of two spaces in the small of the back. Some eight percent had a recurrence of rupture, usually in the same space as the previous one.

"Observed changes in acid mucopolysaccharide content imply marked alterations in the regular lattice framework of the ground substance of the disc, perhaps initiated by trauma or pressure, and perhaps leading to acute disc failure or rupture," he said.

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PSYCHOLOGY

Local Brain Damage Causes Vocabulary Loss

► WHEN OLD people suffer from the mental deterioration known as senile dementia, they have a vocabulary superior to their intelligence as shown by non-language tests.

This pattern of vocabulary superior to retained intelligence is associated with a diffused damage to the brain, Prof. Pierre J. Pichot, of Paris, told the meeting of the XIV International Congress of Psychology in Montreal.

When such old people also lose their ability to use and understand difficult words, it is because in addition to the mental deterioration of old age, and superimposed on it, there is a latent aphasia, or word blindness, which is associated with localized brain damage such as might be caused by epilepsy, Prof. Pichot said.

This possibility should be kept in mind in the practical use of the so-called mental deterioration scales which depend upon the relation of vocabulary superiority to retained intelligence level.

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AERONAUTICS

Airborne Radar for Commercial Airlines

► AN AIRBORNE radar enables commercial pilots to see instantly the position, intensity and extent of storms as far as 150 miles ahead.

The equipment, developed by Bendix Aviation Corporation, can also survey the terrain. Landmarks, such as rivers and coastlines, are often important to navigation when flying "blind."

Commercial production of the units will begin this fall.

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PSYCHOLOGY

Suggested as Model: Alcoholics Anonymous

► ALCOHOLICS ANONYMOUS could serve as a pattern to make group therapy in prisons more effective, Dr. Donald Cressey, University of California at Los Angeles criminologist, has suggested.

"Most so-called group therapy in prisons is largely individual psychotherapy simultaneously administered to a number of persons," he declared. "Criminality is 'treated' clinically as if it were a disease, like syphilis.

"Much time is spent in allowing the participant to ventilate suppressed hostility. This supposedly enables him to get rid of individual emotional disorders responsible for his criminality.

"Any value gained from group participation is offset when fellow inmates not in the group ridicule a participant's newly acquired 'Square John' attitude and guards show distrust of his reformed demeanor."

In Alcoholics Anonymous, the participant immediately acquires an intimate membership in a network of group relations explicitly utilized to reform him, Dr. Cressey points out. His belligerence is reduced quite incidentally. If the program is initially successful, he gains status in the group. His new attitudes are reinforced as the "reformee" becomes the "reformer."

"Prison group therapy should develop and sustain anticriminal values among inmates as Alcoholics Anonymous does with anti-alcoholism among its participants," Dr. Cressey concluded.

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PEDIATRICS

Hormone for Babies May Cause Sterility

► GO SLOW on the use of male hormones for the treatment of small, underweight babies. It may cause sterility later in life.

Studies by scientists at the University of California at Los Angeles Medical School and Rutgers University showed that when five-day-old mice were injected with male sex hormones, complete infertility resulted later in adulthood. In 10-day-old mice some infertility also resulted. A five-day-old mouse is at about the equivalent stage of development as a one-year-old human baby.

Male hormones have been used to treat several conditions in infants. For example, it has been found that premature infants, considerably underweight, may be brought up to normal weights through use of male hormones.

While the experimental results with mice may not be directly applicable to human beings, the scientists feel they are significant enough to warrant extreme caution in the use of male hormones during formative years.

The studies were made by Dr. Charles Barraclough, U.C.L.A. Medical School, and Dr. James H. Leatham of Rutgers.

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